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THE THRILL IN RELATION TO THE LESSER CONSCIOUS STATES[1]

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In undertaking a study of the lesser conscious states of mind the most embarrassing factor that the student has to contend with is the conflict of opinions that exists among the various theories devoted to this subject. For this reason it is advisable that we approach the subject from the standpoint of a study of the structural factors involved in psychic processes.

As Bagley remarks, "The ground plan of the nervous system—the arrangement of the sensory systems, association systems, and motor systems—may be looked upon as substantial evidence that the mind exists for the purpose of adjusting the organism to its environment consistently with reports informing of this environment. In harmony with this general arrangement, we must conclude that the ultimate standard or test of all nervous action is adjustment." Münsterberg, expressing similar opinions, says, "What else can be the brain's function in the midst of nature than the transforming of impressions into expressions, stimuli into actions? It is the great apparatus by which the organism steadily adjusts itself to the surroundings. There would be no use whatever biologically in a brain which had connections with the sense

[1] Because of the fact that such terms as "subconscious," "unconscious," "preconscious," "foreconscious," etc., are oftentimes used to describe factors in a way that is conflicting in the meaning implied, the use of the terms "lesser conscious states" and "lesser conscious" have been substituted, in the present paper, to describe all states of consciousness whose degree of awareness is less than that degree which we are accustomed to define as "accentuated consciousness" or "attention."

organs, but which had no connections with the muscular system; and, on the other hand, a brain which had motor nerves and muscular adjustment would be entirely useless if it had not sensory nerves and sense organs connected with it. In the one case the world would be experienced but no response would be possible; in the other case, the means of response would be given but no adjustment could set in because no experience of the surroundings would be possible. Adjustment every moment demands the relation of the brain in both directions" . . . "We must keep this intimate and necessary relation between the motor and sensory parts constantly in view and must understand that there cannot be any sensory process which does not go over into a motor response. Then only are the ways open to develop physiological views which give a physical basis to the processes of attention and vividness and inhibition, just as well as to the processes of memory and association."

We must constantly bear in mind the intimate relationship between the psychic activities of the brain and the physiological activities of the body in general. Whether we are considering purely intellectual processes and their relationship to suggestion from an objective stimulus, or whether we are considering emotional states of the psyche and their relationship to an objective stimulus—in either instance we are dealing with phenomena that have a direct association with physiological states and whose peculiar modes of response in the psyche realms are influenced by these physiological states, and which, in each instance, may be considered as being either an intellectual or a physiological attempt in adjustment of the individual in enhancing his sense of physiological well-being. Therefore, when we describe anything in terms of psychological significance we are only making an empirical division of what are in reality intimately associated factors of the entire physiological and psychical realms of the individual.

As a psychic phenomenon which is basic to all other cerebral activities we have "consciousness." Whether we are considering instincts, habits, opinions, or any other of the many psychic phenomena, we are dealing with phenomena that were at one time intimately associated with conscious processes. For this reason we will choose "consciousness" as the first psychic phenomenon to be considered. Münsterberg, describing its nature, says, "Consciousness is an inactive spectator for the procession of the contents. Thus consciousness itself cannot change anything in the content nor can it connect the contents. No other function is left to consciousness but

merely that of awareness. Every change and every fusion and every process must be explained through the relations of the various contents to one another. Consciousness has, therefore, not the power to prefer the one idea or to reject the other, to reinforce the one sensation and to inhibit the other . . . Our conscious experiences are thus, indeed, not only here and there, but usually the products of chains of processes which go on entirely on the physiological side. We have no reason at all to seek for those preceding actions any mental accompaniment outside of consciousness, that means, any subconscious mental states. Then, of course, this physiological explanation also covers entirely those after-effects of earlier experiences, especially emotional experiences, which the physician nowadays likes to call subconscious "complexes."

In accordance with Münsterberg's views, we are to conceive consciousness as being the degree of awareness that we feel when adjusting ourselves to new environmental stimuli or in readjusting the cerebral effects, brain-cell mechanisms, of past experiences to present environmental stimuli. Again, in accordance with the theory of the ideal of physiological well-being, we may say that consciousness is the sum-total of all the organic sensibilities as they affect the cerebral centres; that it is the combined effect of these internal causes, along with those stimuli in the way of external causes, that constitute the condition of awareness which we term "consciousness."

Modify the internal causes and we produce an immediate effect upon consciousness; modify the external causes, by changing the form of stimulus, and we also produce an immediate effect upon consciousness. In this way we can recognize the dual source of factors that contribute in creating and maintaining consciousness. Seashore, in describing this fluctuating nature of consciousness, says, "Consciousness is never a placid stream; it moves more or less boldly in waves like breakers on the ocean beach. There are large waves and within these are wavelets and ripples of various degrees. This change in the form and degree of consciousness we ordinarily speak of in terms of attention; hence the expression attention waves."

Like consciousness, attention has a physiological basis. Ribot, in describing attention, says, "Its mechanism is essentially motor, that is, it always acts upon and through the muscles, mainly under the form of inhibition. . . . The motor manifestations are neither effects nor causes but elements; together with the state of consciousness, which con-

stitutes their subjective side, they *are* attention. It is simply their reverberation in consciousness. It depends on the quantity and quality of the muscular contractions, of organic modifications, etc." He further remarks, ". . . whether strong or weak, everywhere and always it is caused by emotional states. This rule is without exception." In regard to this last assertion of Ribot's, the objection must be made that attention can never be *caused* by emotions, because emotions are purely sensory effects and are incapable of causing anything. Emotions are simply the awareness in the psychic realms of the degree of stress the physical system has been forced to undergo in elaborating the thrill force in response to a given stimulus. We may look upon attention as being that part of the thrill force which is utilized in the intellectual processes involved at the moment, the intellectual processes here being the particular settings that a given experience causes the brain to take in making a given adjustment. Another part of this elaborated thrill force is utilized in an activity or movement of some sort. However, it may be completely utilized in the form of intellectual work.

From the foregoing we are justified in saying that attention is an accentuated part of consciousness, but not that it is the cause of consciousness. We may say that a given stimulus causes us to have a thrill and that it is the thrill force elaborated that arouses consciousness. Consciousness once aroused, the particular stimulus causes it to become accentuated; the individual attends. If, on the other hand, we substitute another stimulus, we immediately produce a change in the accentuation of consciousness; the individual attends differently. This may be readily illustrated as follows:

We will presume that a young man has taken his prospective bride to theatre. Granting that the stage curtain has arisen and the play is in progress, the young lady's consciousness is most vividly affected through her sense of sight; she is attending with her eyes. Her escort asks her a question; her consciousness is now most vividly affected through her sense of hearing—she is attending with her ears. A strong odor of perfume emanates from somewhere in the surrounding audience; her consciousness is now most vividly affected through her sense of smell—she is attending with her nose. Her escort offers some candy to her; partaking of a bonbon causes her consciousness to become most vividly affected through her sense of taste—she is attending with her tongue. Finally, we may presume that the escort slyly takes the young lady's hand into his own; her consciousness is now most vividly

affected through her sense of touch—she is attending with her hand.

From the above illustration we may glean the following three facts: (1) That both consciousness and attention are purely passive phenomena. (2) That it is not consciousness but attention that is affected by various stimuli. (3) That consciousness and attention are the medium whereby the individual is able to make a constant adjustment of inner relations to outer relations. An objection may be interposed here that what has been described was only spontaneous attention, and that the so-called "voluntary" attention mentioned by some writers could not be said to be passive. However, this difference that is supposed to exist between the two mentioned forms of attention is one that is more apparent than real. The so-called "voluntary" attention is an acquired form of this phenomenon. It differs from the more elementary form only insofar as the elementary form is affected by an immediate or present stimulus, while the acquired form is affected by a remote or an ideal stimulus. But in both instances it is the stimulus, whether present or "imagined," that creates and maintains the attention, and for this reason we are justified in considering both forms of attention as being purely passive phenomena.[2]

James, describing the immediate effects of attention, remarks: "The immediate effects of attention are to make us:

a) perceive—
b) conceive—
c) distinguish—
d) remember—
e) shorten time reactions.

It is obvious, here, that it depends upon the first three mentioned effects, (a), (b), (c), what the fourth (d) shall be.

[2] What is referred to here is "the *fact* of attention as opposed to the *feelings going with it.*" We are to presume here that the only difference that exists between what was in a previous paper described as "active" and "passive" types of attention is only a relative degree of activity in the preliminary phenomena associated with states of attentiveness. It is this last that we should have in mind when defining attention as being "active" or "passive;" remembering that attention itself, as a fact, is always passive when once aroused. We may add here that what Bagley defines as "secondary passive attention" would for us represent that form of attention in which, by habitual experience, not alone do we have the "attention" itself present as a passive factor but that we likewise have the preliminary or antecedent phenomena occurring in a passive way: the result of an acquired form of response to a given stimulus.

In other words, how we perceive, how we conceive, how we distinguish, determines how we are going to remember.

Again, all of these effects depend upon the general bodily tone of the individual at the time of the given stimulus to which he is attending. If his general bodily tone is good, the effects produced will be altogether different from what they would be if his general bodily tone were bad. This factor applies not only to the immediate effects of attention but likewise to the resulting after-effects of these. He will have a tendency to recall a given experience as pleasant or unpleasant according as he happened to feel at the time of having this experience. It would be wrong, however, to say that any one given experience permanently determines an individual's attitude towards a given mode of reaction. This requires several experiences to a given form of stimulus. If, after experiencing a certain form of stimulus several times, the effects prove to be uniformly unpleasant, we are justified in presuming that the memory of this experience will create a permanently unpleasant effect. On the other hand an experience that at one time was associated with a condition of general bodily tone that caused the individual to be unpleasantly affected may, upon a subsequent experience of this same form of stimulus, provided the individual's general bodily tone be good, prove to have a pleasant effect. In such an instance as this last the final result of a series of varying effects will be that the individual will learn that under certain conditions he may expect a pleasant effect, and that under other conditions he may expect an unpleasant effect from the same form of stimulus. As Bagley remarks, "The same complex of sensations means different things to the same individual at different times. . . . One has different attitudes towards things—a professional attitude, social attitude, a work attitude, a play attitude, etc. According as one has one or another of these attitudes, one interprets sensations in this way or that."

As a consequence of this phenomenon of memory of past feeling states, pleasant or unpleasant, we find that an individual wishes to again experience those stimuli which have most often afforded to him a sense of pleasure and that he is inclined to avoid those experiences that in the past were most often felt as being unpleasant. It is this desire for the repetition of past pleasant experiences and the desire to avoid a repetition of past unpleasant experiences that is at the basis of "habit formation."

As James describes it, "An acquired habit, from a physiological point of view, is nothing but a new pathway of discharge formed in the brain by which certain incoming currents ever after tend to escape." Stated just so the matter seems simple enough; all one has to say is, that given a sufficient number of experiences of pleasant effect by a certain form of stimulus, and as a result of this the individual becomes addicted to a certain form of habitual behavior; that is, he has formed a habit. According to such a conception of what constitutes a habit we would expect that an individual would manifest this habit upon the slightest provocation, without the intercession of any attempts at self-control; this would be habit in its purest form. In some conditions, such as narcomania, dipsomania, etc., we find such a state of habit formation existing. However, in normal individuals there are other factors involved which serve to modify this tendency of habit formation. In the stead of a tendency to excess there is developed a counter-tendency; we say that the individual forms habits of restriction. For example, a professor may have a habit of smoking cigars during the greater part of the time that he is not attending his classes. However, during the time that he must be upon the lecture platform of his class room he must keep his tendency to indulge in smoking in abeyance; he must practice a habit of restriction. As Bagley remarks, "The tendencies to reaction, therefore whether inherited or acquired, come to be systematized, grouped together, with reference to large functions of life. A group of systematized tendencies to reaction is termed an 'apperceptive system.' Each system represents an adjustment to a phase of environment, which adjustment is constant with us while we are in a certain mood. A system may therefore be of a high or low degree, according as it refers to a primitive or a highly developed need of the individual. . . . Whenever one has a number of experiences that have been condensed and systematized, one has an apperceptive system. It may be large or small, according to the variety and scope of the experiences that it covers, but in either case it fulfills an important function in the economy of our mental life." Thus, we are able to note that the difference between what we speak of as "habits" and what we speak of as "apperceptive systems" is one of degree only; the same factors are common to both phenomena. Whereas in a habit we have the individual adjusting himself to a particular form of stimulus, so that it becomes an organised brain process, in an apperceptive system we have the phenomenon of adjustment

carried to a higher degree; we have an adjustment of an individual's habits, one to the other, in a systematized way. In this last we observe the tendency of the brain towards automatic behavior occurring on a large scale. For this reason we may look upon habits as occupying a so-to-say "borderland" stage of consciousness between that degree which we recognize as accentuated and the degree which we ordinarily have in mind when we mention so-called "subconsciousness." Bagley has described this "borderland" nature that habits manifest in relation to consciousness so well that I will use his description here. He says, "In the modification of adjustment, experience functions in two ways: (a) with a minimum of consciousness, or even without consciousness—marginally or automatically; and (b) with a high degree or, perhaps, a maximum of consciousness—focally. . . . These terms, however, really represent the extremes of functioning; between them are all degrees and shades through which the two extremes merge into one another." Describing the process of learning to ride a bicycle, he remarks, ". . . The stimulus and the adjustment were data of consciousness. But gradually consciousness leaves the process more and more to look after itself. When the necessity for conscious control no longer exists,—when the movement can be adequately 'set off' by the stimulus in this mechanical fashion,—the process is said to be *automatic*.

"Automatic movement is therefore seen to be identical with reflex movement except in this particular: it must be built up during a period of conscious control, while the latter may run its course from first to last without conscious intervention. . . . The process of bicycle riding, once mastered, may go on either with a minimum of conscious intervention or entirely without conscious control. It represents, therefore, a type of functioning of experience that may be termed unconscious or subconscious. There are, on the other hand, certain habits in which the conscious element is more pronounced. These are *marginal* habits, and they differ from automatisms in that the stimulus comes into the field of consciousness, but into the margin rather than the focus. . . . 'Sensori-motor' actions form good examples of this type of habit. They include the multitude of little things that one does in the course of daily life—the habitual adjustments involved in dressing, eating, etc. The sight of the coat 'sets off' the adjustments requisite to putting it on. . . . At the table, the sight of the knife and fork suggest the movements required to take them up; the sight of food suggests

the movements that will carry it to the mouth, etc. . . . Another type of marginal habit is represented by 'ideo-motor' actions. Ideo-motor action is similar to the sensori-motor variety except that an idea, rather than an external stimulus, sets off the accustomed adjustments. Ideo-motor habits may be illustrated by the processes of speaking and writing. Here the adjustments that are requisite to the formation of the spoken or written word follow upon the idea of the word. . . . An important general characteristic of habit is well illustrated by the examples cited. Once the process of bicycle riding has become thoroughly automatized, the bringing of the adjustments back into the focus of consciousness will seriously interfere with its efficiency. Similarly, where movements of walking become 'self-conscious,' they are thereby rendered awkward and ungainly. The same rule holds for marginal habits. When one has mastered the use of the correct forms of speech, attention to these forms will very likely render the expression stilted and formal."

Passing now from a description of habit phenomena which, as we observed, occupy a sort of "borderland" position between those activities associated with accentuated states of consciousness and those which are associated with lesser states of consciousness, we will proceed to consider the lesser conscious states and, later, the phenomena which are found to be present in them.

Münsterberg, in describing the so-called "subconscious phenomena," says, "But if we have no reservoir with stored-up subconscious ideas, we cannot have a workshop either to prepare therein subconsciously combinations of subliminal material. It is again the physiological action which is entirely sufficient to explain just as much as the mental mechanism could explain. Of course popular science turns naturally to psychic conceptions first, because those hidden processes which we must presuppose to explain the conscious results are thoroughly purposive and selective. But have we really a right to insist that purpose and selection refer necessarily to psychical factors and are incomparable with physiological processes?

On the contrary, whenever purpose means, as it does mean in this case, a certain adaptation to the ends of the individual we must acknowledge that every organism shows such purposiveness. When the body digests a meal, a hundred thousand cells are performing the most complex acts for the purposes of the organism, and they select the right chemical processes more safely than any chemist would be able to do; yet nobody

presupposes that there is a mental interplay in the intestines. In the same way all other tissues are performing adjusted acts by physiological causes: have we any right to expect less from the tissues of the central nervous system? Why cannot they, too, produce physiological processes that lead to well-adjusted results and that means to apparently purposive sensorial excitements and motor impulses. But we must go much farther still. Not only that the physiological cerebration is well able to produce the 'intellectual' result, but the physiological side alone is fit for it, the psychological is utterly unfit. . . . There is thus no reason to conceive a psychical fact existing outside of consciousness, and that corresponds to the only significant meaning of consciousness. Consciousness is nothing which can be added to the existing mental facts but it indicates just the existence of the psychical phenomena. Consciousness cannot do anything, cannot look here and there and shine on some ideas and leave others without illumination. No, consciousness means merely the logical relation point of its contents; the psychical phenomena are in consciousness as the physical phenomena are in nature; there cannot be physical phenomena outside of nature. . . . Why the mental accompaniments of certain physiological processes are sometimes inhibited must of course itself be explained physiologically; everything seems to point to the relation between sensory excitement and the openness or closedness of motor channels of discharge."

Ribot in describing "subconscious phenomena" says, "The physiologic solution is simple and comprises few variants. It maintains that subconscious activity is purely cerebral; the psychic factor which ordinarily accompanies the work of the nervous centres is absent. I incline towards this hypothesis, without disregarding its shortcomings and its difficulties; but, at least, it seems to me not contradictory as is the adverse hypothesis. It has been established by numerous experiences (Fere, Binet, Mosso, Janet, Newbold, etc.), that unconscious sensations (not apperceived) act, since they produce the same reaction as conscious sensation, and Mosso has been able to maintain 'that the testimony of consciousness is less reliable than that of the sphygmograph,' but there are cases more complex. For instance, that of invention is quite different, for it does not merely suppose the adaptation to the end which the physiologic factor would suffice to explain; it implies a series of adaptations, corrections, and rational operations whose nervous action of itself furnishes us but few examples. In spite of everything, I am coming more and more to the side

of the physiologic hypothesis. . . . At the present time the majority of psychologists admit that the *ego,* the person, is a synthetical complex, which in its normal state is made up of relatively stable elements, in spite of incessant variations." In those abnormal cases, when a new personality arises, Ribot says, "This new synthesis, of which the subconscious furnishes only the materials (and these only in part), depends upon profound causes, probably physiologic, having their roots in cenesthesia. Whatever opinion one may emit upon this last cause, it is a distinct study which begins here; subconscious processes play a rôle which is secondary and subordinate and are, properly speaking, a result, an effect."

Jastrow remarks, "To me the subconscious is psychologically significant and logically defensible only under some form of concept that clusters about the organic unity of the mind, and from such a base surveys in orderly sequence of relation, the divergent realm of minor and major abnormalities. . . . It is equally fortunate for the comprehension of the abnormal that so intrinsically a procedure as dreaming should be so common; and this both as furnishing a familiar alteration of mental state (physiologically conditioned), and as revealing the normality of the easy going, revery-like, streams of mental occupation that constantly and characteristically contribute to the psychic life." Describing disordered personalities, he says, "In each the demonstrated, though gradual and hard-won fusion points to the underlying unity despite temporary psychological (or physiological) barrier, as do also the occasional spontaneous intercourse between one realm and the other and the artificially encouraged *pour parlers* upon a neutral ground."

Janet has remarked, "Are cerebral phenomena always accompanied by psychologic phenomena? When psychologic phenomena diminish, when they are reduced to their simplest expression, do they not tend to disappear, and may not one then say that nervous phenomena subsist alone? May not certain coördinate movements which are but ill perceived by patients during their convulsions and in choreas be attributed to simple cerebral phenomena without interjecting the notion of psychologic phenomena? If we were really determined to baptize these physiologic phenomena without thought of the name subconscious might we not, on account of the analogy of the name, say that all the phenomena of somnambulism or of automatic writing are easily explainable 'by phosphorescent shadows which flit across certain centers of the cerebral cortex!'"

Prince in describing "subconscious phenomena" says, "It is a fundamental interpretation of psycho-physiology that all thought is correlated with physiological activities. Whatever doctrine we adopt, whether that of parallelism or psycho-physical identification, every psychical process is correlated with a physiological process and *vice versa*. We cannot conceive of a psychical activity without a corresponding physiological one. . . . For those who accept panpsychism there is no distinction to be made between conscious processes and brain processes of a certain order, excepting as a point of view. They become identified one with the other. The psychical is the *reality* of the physical. I cannot conceive of brain processes except as objective phenomena of conscious processes, and I cannot conceive of consciousness excepting as the reality or 'inner life' of brain changes. So that we may indifferently describe automatic actions as manifestations of physiological activities, if we keep to one set of terms, or of psychical activities if we mix the terms."

In the opinions of these five authorities which we have briefly reviewed, we can notice a distinct tendency to favor physiological conceptions of "subconscious phenomena." In adding a sixth conception of "subconscious phenomena" here, hypotheses not assumed in the foregoing will be presented. If we will suppose that the difference between the activities of the cells of the brain and of the cells of other bodily organs is one that is solely the result of the specific qualities inherent to each and that, except for this specific nature of functioning, the brain-cells differ in no way from other bodily cells, but are subject to the same general physiological laws, we may finally add, then, that consciousness is merely a form of that awareness which is common to all sensory nervous elements and that it differs from the awareness which is found in other structures only in being that particular part of nervous energy to which certain brain-cells are sensitive or responsive. Again, we may say that consciousness in its accentuated form of attention differs from so-called "subconsciousness" or lesser consciousness only in the degree of its awareness. Finally, if we say that consciousness is that physiological state of awareness necessary, in cerebral functioning, for the purposes of an adjustment of the body to a given stimulus, lesser consciousness is that physiological state that remains after an adjustment has been completed or, in the event that an adjustment was not completed, is that state that remains after a change or a cessation of a given stimulus.

Having described the lesser conscious in a general way, we will now proceed to consider some of the particular phenomena found present in it from time to time. As Hart writes, "If we are asked to turn our mental eye inwards and carefully observe at any given moment the content of our mind—or, as it is technically termed, the momentary 'field of consciousness'—we should probably describe it as an indivisible whole, a uniform stream of thought progressing towards some definite end. It would not appear to be composed of separate parts, each proceeding independently of the other, but of sensations, ideas, and volitions all united in some common aim. If I am engaged upon a mathematical problem, then my field of consciousness seems to consist at the moment solely of the various mental processes necessary to the solution of the problem. A few moments later my attention may perhaps be diverted to making plans for a forthcoming holiday, but the mathematical problem will then have temporarily retired from the field of consciousness; the problem and the holiday plans do not both occupy the mind at once, although our attention may rapidly oscillate from one to the other. We should find, moreover, that in spite of the fact that mathematics and holidays have apparently nothing in common, there was nevertheless some link which carried my mind over the gap between them, and that in reality no break in the continuity of the stream of thought occurred."

If we now add to this description which Hart has given an interpretation of the facts presented, in accordance with the theories expressed in the present and in a previous paper, we shall at once observe not alone the cause of the continuity of the stream of thought but also the relationship that the cerebral activities have to activities occurring elsewhere in the body. Being engaged in solving a mathematical problem would simply mean that the individual was affected by a given stimulus, and that in attempting to solve the problem he was undergoing a process of adjustment of himself to this particular stimulus. We may further presume that during this process of attempted adjustment the brain-cells, which are functioning, are beginning to manifest symptoms of fatigue. This manifestation of fatigue would be felt by the individual in the form of a sense of dullness, restlessness, irritability, etc., and in addition there would be felt a certain craving for a change of some sort. We call such a craving a "thrill-craving." If he had previously learned that a holiday would soon be forthcoming his attention would now be directed to a contemplation of it, and this contemplation would serve as

the means of affording a pleasant thrill to him. Just why he happened to have the thought of a forthcoming holiday, instead of another thought, occur to him, we may say was due to the fact that because of its intensity this particular pathway of discharge was the most viable. Again, we might presume that the promise of a forthcoming holiday was absent, and that instead of contemplating a holiday the individual sought relief for his thrill-craving by partaking of a glass of wine or by smoking a cigar. Whether he contemplated the holiday or drank the wine or smoked the cigar, or sought a change or diversion by means different from any of these would, of course, depend upon his habits or tastes and upon his situation in life. The processes involved here are of two different orders, though both are adjustive ones in nature. The solution of the mathematical problem concerns the individual as an adjustment of himself to a certain external event. The satisfaction of his thrill-craving concerns the individual as an adjustment of himself to an internal event—a lowered state of bodily tone. Both the former and the latter may be looked upon as representing attempts on the part of an individual to increase his sense of physiological well-being. Until the problem is attempted to be solved there exists a certain sense of uneasiness or concern in the individual in regard to his welfare which has a direct effect upon his sense of physiological well-being. Until the thrill-craving is relieved in some way there exists a certain sense of dullness, restlessness, etc., which indicates a physiological demand for adjustment. Hence the fluctuations of attention, which Hart writes of, may be said to be due to the demands of physiological well-being from moment to moment—at one time, an adjustment of an external condition to an internal one; at another time, the adjustment of an internal condition to an external one. It depends upon the imperative needs of the moment. It is obvious here that the real basis of an individual's particular conduct, which we recognise to be a physiological one, is, in most instances, either a matter of partial or of total unawareness to him.

As another factor in human behavior which is associated with thrill phenomena and which is a lesser conscious process we have what I term "substitution by convenience." In order to make this process clearly comprehensive an imaginary example will be used. We will suppose an individual to be a successful business man and that he is married. Coming home after a day of very exacting business he feels dull, irritable, and excited. He is too tired to seek recreation by

going to the theatre because that would require a changing of his clothing, a certain amount of exercise, etc. He is an abstainer from alcoholic beverages and, although he uses tobacco, does not care to smoke at the present moment. Feeling too restless to desire sleep, he is somewhat irritable because he lacks a suitable and convenient means of satisfying his thrill-craving. Finally, we will presume that he glances over the evening papers and then retires, though still feeling dissatisfied. As a consequence of this last we are to suppose that he indulges in a certain amount of coitus and that in doing so he satisfies his thrill-craving, feels relieved, and goes to sleep. The use of coitus as a means of convenient thrill production, as cited in the above example, is perhaps one of the commonest causes of excessive venery in our present times. It must be added that the tendency to practice excessive venery is one that is becoming increasingly prevalent, and for this reason the subject is of great interest as a problem of thrill phenomena.

As other thrill-producing phenomena which may be included as substitution by convenience forms, we have narcotism, alcoholism, excessive day-dreaming, masturbation, etc. Inasmuch as the " apperceptive systems " which Bagley describes have an intimate relationship to those forms of thrill habits which I classify as " substitution by convenience " phenomena, a review of his description will be made at length. Bagley writes, " Mind interprets impressions from the outer world, not according to their intrinsic nature but according to their relation to the needs of the organism. These needs may be roughly grouped into two classes: (a) *primitive* needs, correlated with the fundamental instincts or tendencies that man has inherited from his brute and savage ancestry; and (b) *acquired* needs, correlated with those adjustments and modifications of primitive tendencies that have been made necessary by the changed conditions of human life, and particularly by the growth of social forces as opposed to individual forces.

" The primitive needs can be reduced to one or the other of two fundamental types of instinct: (a) self-preservation and (b) race perpetuation; or, more briefly, the food instinct and the sex instinct. When the former is predominant, sensations that inform of the environment are interpreted, apperceived with reference to self-preservation; objects of the external world appeal to one, as food, shelter, weapons, etc. When the latter instinct is predominant, one interprets of the

outer world with reference to the sex impulse—as decoration, means of attraction, etc.

"With the advance of social organization, however, these primitive needs, represented ultimately by one or the other of these two fundamental instincts, become more and more remote, more and more overlaid by intermediate processes. One no longer apperceives objects with reference to their direct bearing upon self-preservation or race perpetuation. One no longer works for the *immediate* gratification of desire or appetite. These may be the ultimate driving forces but they are frequently lost to view in the complication of the processes that intervene.

"Apperceptive functions may, therefore, be classed into (1) those of low degree, and (2) those of higher degree, according as one reads a primitive or a complex meaning into sense impressions. For example, the apperception of a teacup as a missive to be hurled at a supposed enemy is an apperception of a low degree; the apperception of the same group of impressions (through which we 'know' the teacup) as an object to drink from is an apperception of a higher degree; while the apperception of a teacup as an object of beauty, a delicate piece of bric-a-brac, is an apperception of a still higher degree. In every case the externally aroused sensations that inform us of the teacup are the same, but in every case we read a different meaning into these sensations. The patient afflicted with apraxia may use a chair as a club or as firewood. This means that his higher apperceptive functions have been cut away. He has been reduced to the plane of primitive needs. The normal individual uses a chair to sit in; he apperceives it with reference to this need, which is obviously of a later growth than the use of an object as a club or weapon. But the antiquarian may see the same chair entirely apart from its conventional use; he may apperceive it as a representative of some forgotten craftsmanship—some 'lost art' of wood carving, perhaps.

"These examples may serve to clear up the significance of the terms 'primitive' and 'acquired.' The use of objects as utensils or as articles of furniture is not instinctive; it must be 'learned.' And it goes without saying that the apperception of an object entirely apart from its 'utility' is a product not of heredity but of acquisition.

"To the child, to the savage, to the boor, these refinements of art are meaningless. He cannot apperceive because the complex and highly organized system of associations and reactions that means apperception are lacking.

"Directly *or remotely,* the manner in which the mind interprets or apperceives new impressions is determined by the relation that these impressions bear to the existence and survival of the organism. It is a maxim of pedagogy that apperception functions most readily along the lines of interest. Interest attaches most strongly to that which has a vital relation to one's well-being. But in a social environment one's well-being is determined by factors far different from those that operate in a purely 'natural' environment. . . . The well-being of the individual always lies, directly or remotely, at the basis of dominant motives. The well-being of the individual finds its subjective counterpart in pleasure. But there are pleasures of a high order and of a low order."

In Bagley's description of "apperceptive systems" we have a means whereby we may further classify thrill phenomena as belonging to systems of low or of high degree, regardless of the sense of physiological well-being or pleasure that the particular form of thrill may afford to the individual. Accordingly, we may classify those forms of thrill activities which were described as "substitution by convenience" phenomena as belonging to apperceptive systems of a low degree. Bearing this new factor in mind, we will proceed with the consideration of "substitution by convenience" thrills, using the example quoted previously for purposes of description.

It is an obvious fact that the individual who was used as an illustration of this phenomenon might have chosen some other form of thrill producing factor instead of coitus. He could have chosen listening to music played by a phonograph, or he might have obtained beneficial effects by the use of a tepid bath or by other means. Again, if we had asked him why he chose this particular means of thrill production instead of others he would undoubtedly have offered reasons why each one which we may have suggested, such as music, a tepid bath, etc., were objectionable to him though in doing so he would not have been prompted to mention that his choice was guided by convenience. Psychologically speaking, we would say that his conduct was guided by processes of which he was largely unaware and that the explanations which he offered, while appearing rational, were in reality false. Technically, we call such processes of self-delusion, "rationalisations." The actual causes of his conduct are due to factors which are physiological in nature. They are the result of a certain association existing between the feeling state that he was in at the time, and past experiences in which similar feeling states were present. As a consequence of this fact, the feeling

state which he experienced as the result of the day's exacting work served, by a process of association, to recall how he had relieved such feeling states upon former occasions. In this instance we are to presume that the past experiences with which this feeling state was associated most intimately or intensely were those of a sexual nature. In other words, out of all the possible associations to which this feeling state may be related those experiences which were sexual in nature have pathways of association which are more open or viable than others. Hence when the man experienced this particular state of feeling he immediately thought of sexual indulgences. He apperceives pleasure from a sexual standpoint. To a man who is accustomed to seek his thrills by means of alcoholic drinks we must likewise attribute the mechanism of his behavior as being similar in principle to that of the above described case, the difference being merely in the form of thrill stimulus used.

We may now summarize the phenomenon of "substitution by convenience" by saying that when, as the result of a pleasurable thrill conveniently experienced, the individual forms a habit of indulging in this particular form of thrill to an excessive degree, we have the phenomenon of substitution by convenience evidenced.

Having described thrill phenomena in their relation to "substitution by convenience," we will now consider thrills from the standpoint of an entirely different phenomenon—that which I term "substitution by reëducation." In changing one's thrill habits from those which are associated with apperceptive systems of a low degree to thrill habits that are associated with apperceptive systems of a high degree, sometimes an individual makes this change of his own initiative; in other instances it is necessary to render the individual assistance in the fullest degree. In the process of making such a change the feeling states are a factor of the greatest importance. This fact is obvious when we consider how difficult it is to convince an individual who is in the habit of using thrills derived from excessive sexual practices, alcoholic indulgences, the use of narcotics, etc; as a means of enhancing his sense of physiological well-being that such practices are pernicious. Simple reasoning or arguments are usually of little avail here. Unless we can substitute other pleasurable forms of thrill-producing stimuli of a high order, and make them appeal to the individual with sufficient force to influence him into accepting them; unless we can do this, our endeavors are most likely to prove to be a failure.

As Bain remarks, "It is requisite, therefore, that the circumstances leading to the concentration of the mind should be understood. . . . Now, there is no doubt that the will is the chief intervening influence, and the chief stimulants of the will are, as we know, pleasure and pain. . . . Coming now to the influences of concentration, we assign the first place to intrinsic charm, or *pleasure in the act* itself. The law of the Will, on its side of greatest potency, is that Pleasure sustains the movement that brings it. The whole force of the mind at the moment goes with the pleasure-giving exercise. The harvest of immediate pleasure stimulates our most intense exertions, if exertion serves to prolong the blessing. So it is with the deepening of an impression, the confirming of a bent or bias, the associating of a couple or a sequence of acts; a coinciding burst of joy awakens the attention and thus leads to an enduring stamp on the framework. . . . Next to pleasure in the actual, as a concentrating motive, is pleasure in the *prospect,* the learning of what is to bring us some future gratification. . . . The pleasures, the pains, and the privations of the Senses are the earliest and the most unfailing, if not also the strongest, of motives. Besides their bearings on self-preservation, they are a principal standing dish in life's feast.

It is when the Senses are looked at on the side of feeling, or as pleasure and pain, that the defectiveness of the current classification into five is most evident. For although, in the point of view of knowledge or intellect, the five senses are the really important approaches to the mind, yet in the view of feeling or pleasure and pain, the omission of the varied organic susceptibility leaves a wide gap in the handling of the subject. Some of our very strongest pleasures and pains grow out of the region of organic life—digestion, circulation, respiration, muscular and nervous integrity or derangement."

From the foregoing we note that not only is the will directly influenced by feeling states of pleasure and of pain but that these feeling states are directly due to physiological processes which, as has been shown, are indicative of the general bodily tone. On the other hand, we can say that alterations of the general bodily tone, the awareness of which we recognize in the form of feeling states of pleasure or of pain, are brought about in two ways:—a general defective systemic oxidation due to a disease process, such as auto-intoxication, tuberculosis, diabetes, etc.; or a more localized defective systemic oxidation, which is caused by defective processes of adjustment occurring in the brain, this last causing a depletion of

the nervous force which, in turn, causes a lowering of the general bodily tone.

As a result of the lowering of the general bodily tone, whether this be directly due to the one cause or the other, an individual seeks to compensate for the unpleasant feeling that is found present in such instances by seeking some sort of thrill. Whether he will seek one form or another of a given type of thrill will depend upon the apperceptive system or attitude that guides his conduct. This is a process that is lesser conscious in its nature. Therefore, when we find an individual making use of a thrill stimulus which is indicative of an apperceptive system of a low degree and which, on account of its convenience, he is using to an excessive degree, it is necessary that we cause a substitution by reëducation in some way.

As an illustration of how this might be accomplished we will use the example quoted when discussing the phenomenon of substitution by convenience. We will presume that for some reason this man's business affairs became more exacting. The additional degree of stimulus that this change caused served, in turn, to create a marked lowering of the individual's general bodily tone. In attempting to compensate for this increased disturbance of his sense of well-being, the individual sought further indulgence in thrills of a sexual nature. Finally, we can say that he was forced to consult a physician because of a nervous breakdown. By skillful questioning the physician not only learns that the man's business affairs have been causing great concern to him but that the man has been prone to indulge in sexual activities to an excessive degree. In this way the physician learns that the man's condition is the result of dual causes which we will term primary and secondary. The primary cause was a lack of adjustment to a given stimulus, his business. The secondary cause was due to a faulty means of compensation in the form of thrills of a sexual nature, which aggravated his condition of lowered bodily tone.

As a consequence of this consultation with the physician the man is ordered to absent himself from business and to abstain from sexual practices for a while. But this is not all; for, as we have seen, unless he substitutes some wholesome form of thrill producing stimulus to replace those stimuli which he is restricting, his efforts to benefit the patient will fail. If the individual is in a very serious condition the physician may insist that he enter a sanatorium and take a rest cure, into which treatment he will institute the use of massage and of baths. Massage and baths may be said to represent two

forms of substitution thrill stimuli since they cause positive passive thrills when properly administered. If the individual's condition is not serious enough to require sanatorium treatment the physician may make a thrill substitution by requesting that the individual indulge himself in some sort of outdoor sport, such as golf, fishing, boating, hunting, etc. Such wholesome forms of thrill producing stimuli we recognize as positive active thrill producing factors, and the process by which we substitute thrills of this character for those of a less wholesome character we term "substitution by reëducation."

Because of its importance and its bearing upon the subject of pedagogy, another example of somewhat different order will be quoted. In this instance we will suppose that the individual is a young girl attending school. The child is refractory in her manners, does not manifest an interest in her studies, and is inclined to indulge in excessive day dreaming. We can consider the individual from two standpoints. It is possible to say that the individual's condition is due to faulty adjustment to a given stimulus, such as unpleasant home-life, or faulty teaching in school, this last having reference to the individual and her capacity for learning rather than faultiness in teaching as applied to the class in general. Again, we may attribute her condition as being due to a lowered general bodily tone caused by malnutrition, adenoids, eye disorders, etc. The treatment here would depend upon the factors at fault—correction of the home conditions, individual teaching, or a correction of the physical disorders, in some instances a correction of several factors.

In correcting the tendency to excessive day-dreaming, which we recognize as a faulty means of thrill production, we would have to make a thrill substitution by reëducation in some way. This might be done by interesting the child in certain games, such as croquet, hand-ball, etc.; or we might interest the child in learning to swim or to acquire the technique of interpretive or of "natural" dancing. Dancing, especially those dances based upon interpretive, rhythmic, or "natural" principles, is without doubt the most forceful means of wholesome thrill production that we have at our disposal at the present time. Not alone is it of inestimable value in the training of normal individuals, but L. Pierce Clark, in a recent article in the Medical Record, reports that he found the use of interpretative and natural dancing of much value as a means of treatment of the nervous and insane. We may attribute the beneficial effects that L. Pierce Clark mentions having witnessed as being due to the positive active thrill which these forms of dancing

afford. Also, mimetic exercises in the forms of "reaping," "sowing," "wood-chopping," and other movements, possess a superior value over those forms of exercises which we commonly speak of as "formal gymnastics," because of their greater positive active thrill producing powers. We may add here that the educational methods of training for children, as advocated by Herbert Spencer, Maria Montessori, and Ellen Key, owe their excellency to the fact that positive active and positive passive thrills are phenomena associated with the use of the principles of instruction as advocated by them. Especially is this so in regard to their positive active thrill producing effects since this type of thrills has a higher value in an educational way than have positive passive thrills. Unfortunately space forbids a detailed description of these systems of education and of the part that thrill producing factors play in them in a lesser conscious way. Likewise, we have omitted describing many other interesting phenomena and the part that thrills play in them in a lesser conscious way, being forced to sacrifice them in favor of a consideration of psychoanalysis, which is the subject that will occupy the rest of the present paper.

Whether or not one accepts the theories of Freudian psychoanalysis, it must be admitted that nothing in the way of scientific thought has in recent years created greater attention, both on the part of the public and among the leading thinkers of the day. The peculiar postulates upon which psychoanalysis is founded have served to arouse curiosity in some groups of individuals, while with others they have been used in a way particularly suited to the purposes of expounding doctrines of mysticism, "new thought," etc. Again, they have been broadly accepted and valued in a practical way by another group of individuals. Finally, they have been the subject of much criticism and have been either partially or totally rejected, as being valid, by another group of individuals, among which are some of the leading thinkers of the day. As an individual representative of this last group Kraepelin may be mentioned. In his criticism of psychoanalysis he says, "The adherents of Freud's psychology of complexes have gone their own way in the view which they take of dementia praecox, as in many other clinical questions. . . . What has bewildered me ever afresh innumerable times was just the complete failure of the most natural complexes emphasized by emotion of healthy life. One may here certainly find the assumption helpful, that it is a case of suppressed and transformed ideas, of 'masks,' the real meaning of which can only be guessed by an interpretation, dependent on the fine

feeling of the observer, of association experiments and dreams, a proceeding which, judging by the examples forthcoming, has little attraction for me. But if by complexes nothing else is meant than delusions, in which the fears and wishes of the patients are reflected, that would be only a new and, as it appears to me, a not exactly desirable expression for an old thing. Its danger lies in the psychological views from which it proceeds. The idea of independent, parasitic psychic neoplasms, which on the one hand are completely withdrawn from the influence of the ego but on the other hand are able wholly to transform and almost annihilate it, would overthrow such a number of everyday and thoroughly ascertained psychological experiences that its substantiation must in any case be supported by quite other means of proof than has hitherto been the case. Here we meet everywhere the characteristic fundamental features of the Freudian trend of investigation, the representation of arbitrary assumptions and conjectures as assured facts, which are used without hesitation for the building up of always new castles in the air ever towering higher, and the tendency to generalization beyond measure from single observations. I must frankly confess that with the best will I am not able to follow the trains of thought of this 'metapsychiatry,' which like a complex sucks up the sober method of clinical observation. . . . I also hold the view that many speeches and actions of our patients are not so nonsensical as they appear to us and that sexual emotions certainly play a considerable part in them. But as I only succeed very exceptionally in explaining my own dreams to a certain extent, although the preliminary conditions are certainly as favorable for that as possible, I must not only say explicitly that the statement that a dream 'always discloses itself as a sensuous elaboration of a complex,' is wholly imaginary, but I am also unable to pluck up courage to give credence to the disclosures which are yielded by the 'analysis' of the processes of consciousness of our patients, which are infinitely more difficult to understand. Certainly anyone who can decide to regard the utterances of the patients sometimes literally, sometimes as the expression of the contrary, sometimes again as 'symbols' of any other ideas whatever, who in all these expulsions, displacements, concealments, finds his way with confidence, will not find it too difficult in the end to discover in a fable of Gellert a background of secret incestuous thoughts, jealous, masochistic, sadistic or homosexual emotions."

G. Stanley Hall, in his criticism of psychoanalysis, has written, "In one thing Freud agrees with the introspectionists,

viz., in deliberately neglecting the 'physiological factor' and building on purely psychological foundations, although for Freud psychology is mainly unconscious while for the introspectionists it is pure consciousness. Neither he nor his disciples have yet recognized the aid proffered them by students of the autonomic system or by the distinctions between the epicritic and protopathic functions and organs of the cerebrum, although these will doubtless come to have due place as we know more of the nature and processes of the unconscious mind. If psychologists of the normal have hitherto been too little disposed to recognize the precious contributions to psychology made by the cruel experiments of Nature in mental diseases, we think the psychoanalysts, who work predominantly in this field, have been somewhat too ready to apply their findings to the operations of the normal mind. . . ."

Woodworth, in his criticism, says, "The main points of the Freudian psychology—infantilism, the importance of sex impulses, and repression into the 'unconscious'—all have an element of truth; but all are over-emphasized to the neglect of other factors that should be included to give a true picture. As to infantilism, while there is no doubt a continuity in the individual's experience and tendencies from birth to adult life, new motive forces are developed, as we have tried to show in another chapter, and the new motives have force of their own and not simply force derived from the instincts.

"The sex tendencies of young children are much overemphasized by Freud, being read into the behavior of children from the standpoint of an adult and not fairly inferred from the behavior of the child itself. The 'unconscious' is certainly overdrawn by Freud. Slips and lapses, as well as dreams, are due in the main to quite other causes than those which he gives them. And as to the sexual impulse, while this tendency is certainly influential in most individuals, it is only one among many tendencies that drive human activity. . . . In practice, moreover, it is always the sex tendency that is emphasized by Freud and his followers. Wherever they are able to detect a sex tendency hidden in a certain activity, that settles the matter for them; the sex tendency is the real driving force and the other apparent motives are mere disguises of the sex tendency. They do not recognize the reality of 'mixed motives.' If the sex tendency is present, it is credited with doing the whole work."

Among other authorities who reject Freud's theories, either partially or totally, are Trotter, McDougall, Hart, and Bjerre.

It is obvious that Freud's theories disagree with those that have been expressed by myself in the present paper since these last are physiological in conception. In taking up the consideration of Freudian psychoanalysis, as we shall now do, no attempt will be made to cover the subject in its entirety, only the most essential parts being considered.

In postulating the "sex libido" as the fundamental factor to all phenomena which he describes, Freud, as we shall show, committed an error that largely invalidates the scientific value of his theories. As may be readily seen, he has made all forms of human conduct accountable to what is in reality only one form of thrill phenomena—those of a sexual character. The faultiness of such a conception was no doubt caused by the fact that while sexual thrills are ones that are very commonly observed, that is, ones which are commonly sought by individuals, partly on account of their intensity and partly on account of their convenience, they are in no sense the only form of thrills that an individual is accustomed to seek; nor are these other forms which they are accustomed to seek to be considered as being "aberrant sexual" phenomena in any sense of that term. We must regard all forms of thrills as being attempts on the part of the body at physiological readjustment; as being attempts to attain or to regain a sense of physiological well-being. Whether or not an individual seeks thrills by resorting to sexual practices, indulgence in alcoholic beverages, narcotic consumption, gambling, excessive day-dreaming, etc., will depend upon his particular conditions of experience, environment, etc. But it is absurd to consider that all of the above mentioned forms of thrill phenomena are capable of being explained as "sexual" in any sense of that term. Hence, we see that what Freud has postulated as being the fundamental factor to all forms of human behavior is, in reality, but a single form of a phenomenon that may be interpreted in dozens of other ways. Bearing this fact in mind, we will now consider the subject of "dreams" from the standpoint of physiological and of pathological conceptions.

In a lecture upon "the dream" Freud has said, "We must find a new path, a new method in order to proceed with the investigation of the dream. I shall now make an obvious suggestion. Let us assume as a hypothesis for everything which follows that the dream is not a *somatic* but a *psychic* phenomenon. You appreciate the significance of that statement, but what justification have we for making it? None; but that alone need not deter us from making it. The matter stands thus: If the dream is a somatic phenomenon, it does

not concern us. It can be of interest to us only on the supposition that it is a *psychic* phenomenon." On the other hand, as Tridon remarks, "Others attribute to dreams a purely physical cause; a heavy dinner may cause nightmares, insufficient bed clothing may cause us to dream that we are at the North Pole, etc. . . . Maury, who studied dreams experimentally for years, gives in *Le Sommeil et les Rêves* a most interesting list of dreams produced in himself by physical stimuli. . . . One of his students was instructed to tickle him on the nose and lips with a feather. He dreamed that a mask of pitch was applied to his face and then removed suddenly, tearing off the skin. . . . A piece of wood having struck the back of his neck, he dreamed that he had taken part in the French Revolution, had been arrested, sentenced to death, and that the executioner was letting the guillotine's knife descend to cut off his head." Tridon adds, "Maury's experiments fail to show why the same stimulus never causes exactly the same dream." This last statement of Tridon's should, however, not dissuade us from conceiving dreams as being excited by physical stimuli; because, as Tridon later states, "The first important observation Freud made about dreams was that they always contain an allusion to some detail of our life during the previous waking state. Something we saw, heard, said, or did between the time of our previous awakening and the time when we went to sleep plays a certain part in every one of our dreams." We may then say that the dreams which Maury described, although they were different when aroused by the same stimuli, may readily be attributed, in part, to the experiences of the previous waking state. Both the parts that the experiences of the previous waking state, as well as the parts that past experiences —which may have occurred weeks, months, or years ago—have, may be attributed to associations in which the laws of recency, intensity, emotional congruity, etc., are factors.

Again, not only do certain experiences serve to recall the feeling states which were present in them at the time of the given experience, but, on the other hand, certain feeling states can recall wholly or in part past experiences in which they were felt. Therefore, in the phenomenon of dream manifestation we may presume that it is this latter process of a certain feeling state present at the time of the dream that recalls wholly or in part certain past experiences in which it was present, which, in turn, go to make up the content of the dream.

Accordingly, we may say that the cause of dreams may be attributed to certain physiological stimuli and that the general bodily tone of the individual during his lesser conscious state of dreaming determines the particular feeling state and its associated past experiences, which are revived and serve to form the dream content. It is due to the fact that oftentimes only the most vivid portions of a past experience are revived and coalesced with similarly revived portions of other past experiences that the content of a dream manifests a certain grotesqueness.

In seeking the nature of the mechanism of revived portions of a past experience we must assume that the threshold of excitability of those brain-cell dispositions revived is lower than the threshold of excitability of the other brain-cell dispositions associated with the stimuli of the given experience; that is, some brain-cell dispositions are more readily aroused than are others. We may account for this increased excitability of some brain-cell dispositions and for the lessened excitability of others by attributing the phenomenon, in a general way, to resistances occurring at the synapses of the neurons affected. Finally, we may account for this increased or decreased resistance of synaptic processes by attributing the condition present as being due to the effect of feeling states at the time of a given experience. As Frost says, "In short, pleasant sensations . . . all tend to lower one chain of synapses, while unpleasant effects—all tend to make another set of synapses become the point of least resistance. When these two tendencies balance each other, as often happens, little things will throw the victory to one side or the other." It must be borne in mind here that all that has been said in regard to this phenomenon may be applied to parts of an experience, as well as to individual and complete experiences; in doing so it will help us to understand Freud's conceptions of dream phenomena from a physiological viewpoint.

Freud, in describing the phenomena of dream activities, which he terms "dream work," divides them into three general processes:—"condensation," "displacement," and "translation." Tridon describing "condensation" remarks, "Things, people, ideas, are frequently compressed into composite formations, like the monstrosity seen by one of Ferenczi's patients, a creature which was half a horse, half a physician, and attired in a night gown." Using this dream of Ferenczi's patient as our example, we will proceed to consider the process of condensation, along with the other two mentioned processes, from the standpoint of physiological conceptions.

Having already noted that dream states are aroused by physical stimuli and that it is the individual's general bodily tone that determines the feeling state, we further noted that it was the feeling state that determined, in a general way, what would be the nature of the dream content. Accordingly, if an individual's general bodily tone is low, his feeling states will be of one kind; while, on the other hand, if his general bodily tone is high his feeling states will be of another kind and, as a consequence, in the case of the former his dream content will be altogether different from what it would be in the case of the latter. In this way the dream differs in no respect from states of accentuated consciousness, since both are influenced by feeling states; although the dream content may be very distorted and grotesque in its manifestations.

In order to understand the cause of this "distortion," "condensation," etc., we must bear in mind that the brain-cells whose dispositions are the activating causes of certain "ideas" are out of adjustment to other associated brain-cells. That is to say, the revival of certain brain-cell dispositions is inhibited owing to resistances occurring at the synaptic processes, which prevents the passage of nerve impulses to them. Such a condition of synaptic resistance may be brought about by fatigue, shock, or an unpleasant stimulation of them in other ways. We are to presume here that the nerve fibre pathway proper is open or viable as far as the synaptic processes, and that impulses may pass in both directions through it provided they do not cross a synape, which, in this case, is inhibited by the increased resistance at the synapse.

Under such conditions we may further presume that when nervous impulses passing along a pathway find a marked resistance occurring, they are caused to be diffused over associated pathways of this blocked one in order to find a way out. In making such a diffusion it is possible to conceive that nervous impulses would pass out over those pathways which offered the least resistance; that is, those which were most open or viable. Just what brain-cell dispositions might be aroused as a result of this diffusion would in each case be an individual factor. We may, however, postulate it as a fact that any "ideas" which become conscious to the individual as a result of a stimulation of certain brain-cell dispositions during this diffusion would be in some way associated with the "ideas" which are reposed in the brain-cell dispositions whose pathways are blocked. In this way we can conceive why it is that in one experience in which a horse's body was a part of the content, in another experience in which the

physician's head was a part of the content, and in a third in which a night gown was a part of the content:—if we will consider that the horse's body, the physician's head, and the night gown were the most intensely affecting portions of the given experiences and, in addition, that these three experiences were associated together as the result of a similar feeling state being a part to each one, it is then possible to understand why these three partial recalls of given experiences are fused together, as a result of a diffusion of nervous impulses over associated pathways, into a single composite figure. Except in being a grotesque combination of parts, due to a disordered diffusion of nervous impulses over association pathways, it differs in no way from what we speak of as "normal" ideas, if we bear in mind that these last are a composite grouping of various brain-cell dispositions in certain ways and that the diffusion of nervous impulses over the pathways associating them is not blocked in any way.

Again, we are to presume that in the case where we have a grotesque composite figure in a dream the diffusion of nervous impulses happens to arouse simultaneously several brain-cell dispositions which merge into one concept when interpreted or conceived in consciousness. On the other hand the peculiarly disordered sequence of events which often occurs in dreams may be attributed to this same disorderly diffusion of nervous impulses, the difference being due to a time factor in the revival of the various brain-cell dispositions. In this way the peculiar manifestations of dream contents become comprehensive from a physiological standpoint. We can explain "displacement" as being due to the diffusion of nervous impulses which is caused when resistances offered by synapses force the nervous currents to pass out over associated pathways and, in doing so, arouse other associated brain-cell dispositions. Also "condensation," "distortion," "elaboration," "translation" and many of the other factors which Freud postulates in describing dream activities may be considered as being vague descriptive conceptions of the physiological activities that have been previously described.

What Freud calls the "manifest content" would be that part of the dream content which an individual recalls, and it would represent the excitations of the brain-cell dispositions as they occur during the diffusion of the nervous impulses over the association pathways. What Freud calls the "latent content" would be those brain-cell dispositions which, on account of being blocked to the passage of nervous impulses to them, are not revived. Among psychoanalysts such a

blocked pathway, which we recognize as being due to resistances of synaptic processes, would be described as a "conflict." In the removal of these "conflicts" by psychoanalytic treatment we may again explain the process in terms of physiology. We may attribute the opening of the blocked pathways and the establishment of a revival of the brain-cell dispositions, as a result of this opening, as being due to a summation of stimuli. That is to say, by arousing all the brain-cell dispositions, whose pathways are associated with those brain-cell dispositions which are blocked, we finally manage to create sufficient nerve impulses to overcome the resistance that the synapses of the affected brain-cells offer. In this way we explain the long sessions of consultation which occur between the individual and the psychoanalyst whereby he draws out, piecemeal, the various remembered parts of dreams which occur in the individual, as representing a process of a summation of stimuli. As to why these synaptic processes leading to brain-cells are resistant to the passage of impulses, we have already noted that fatigue or an unpleasant stimulus of any sort may cause this: and since it is these synaptic processes that control the passage of nervous impulses to brain-cell dispositions, it is obvious that we need not conceive the inhibition of activity as being due to a "mind censor" of any sort.

Another phenomenon which is of interest here is the occurrence of several dreams during a night's sleep. As Freud remarks, the same night's dreams are always found to be closely connected, to bear on the same theme, and so to aid the interpretation of each other. Like the foregoing phenomena of condensation, distortion, etc., which have been described this last mentioned may be conceived from a physiological standpoint. That is to say, we may consider that the arousal of the brain to a state of lesser consciousness by physical stimuli several times during a night's sleep affects in each instance brain-cell dispositions whose pathways are associated with a given pathway through which the nervous impulses are traveling. The given pathway which is referred to here means that pathway which, while being the most viable or open to the passage of impulses along its course, cannot transmit these impulses to certain brain-cells with which it is most closely associated because of a resistance of the synapses along its course to these brain-cells. The diffusion of nervous impulses which takes place in each instance of lesser conscious revival may be supposed to affect different brain-cell dispositions associated with the pathways over which the impulses are traveling—certain groups being activated at one

time while other groups are activated at another time, all of these groups being closely associated with each other. What is of especial interest here is to know why a certain pathway becomes a so-to-say centre from which these nervous impulses diffuse over into other associated pathways. In order to understand this we must consider for a few moments certain phenomena of adjustment which occur during our more conscious states or states of accentuated consciousness.

It is possible to conceive that in almost every day of our life there arises certain conditions to which we must adapt ourselves or, as we have previously described it, stimuli to which we must make an adjustment of ourselves. Again, it is a common experience that we often fail in attaining a satisfactory adjustment of ourselves to given stimuli, and as a result of the intensified activity of the brain-cells in all processes of adjustment to stimuli, two phenomena may be noted —one a feeling of stress, and the other, a fatigue of the brain-cells involved. It is these two phenomena which later have a marked influence in all dream activities. Further, these two processes are intimately related to one another. However in order to understand this relation we must presume that a condition exists here that at first sight may seem somewhat paradoxical. We are to suppose that the more a given pathway is traversed by nervous impulses, the more open or viable it becomes to the passage of these impulses; while, on the other hand, the more a given set of synapses are caused to be activated over a single interval of time the more resistant they become to the passage of nervous impulses. The reason for this is that, as Frost says, "Nerves are practically unfatiguable," while "the synapses very promptly show fatigue when successively stimulated." On account of this difference existing between the nerve fibre and the synapse we may say that it is due to the tendency of a persistence of the passage of nervous impulses along nervous pathways, after the cessation of a given stimulus, that the feeling of stress is brought about. Passing along the nerve fibres, the impulses are prevented from continuing their course along a further given path by the resistance which these impulses meet at the synapses which have been affected by fatigue. The result is that these impulses are more or less dammed back, producing a feeling of stress thereby, and are forced to seek an outlet by diffusing over associated pathways. Again, when a certain group of brain-cell dispositions, with their associated pathways, have been made active by the passage of nervous impulses to an intense degree, if we suddenly change the form

of exciting stimuli at the time active for another form of stimulus there is a possibility of causing a certain degree of confusion to occur in the individual experiencing the change. This fact is, likewise, due to the persistence of nervous impulses traversing the nervous pathways associated with the former stimuli and in this way interfering with the flow of nervous impulses in the pathways associated with the later stimulus.

If, now, we will apply the foregoing factors to a further study of dream phenomena, the physiological conception of the dream will be completed. Given certain experiences during the previous waking state, which demanded an intense activity of nervous impulses to certain brain-cells over given pathways, and considering that this activity marked the attempt at an adjustment of an individual to certain stimuli, we may finally add that, as a result of this intense stimulation, the fibre pathways were made readily viable to the passage of subsequent nervous impulses, though the synapses for the time being, were made more resistant. Therefore, when during sleep an individual is aroused to a state of lesser consciousness, or dream state, by physical stimuli, it is these pathways which during the previous waking state were the most intensely active channels for the passage of nervous impulses that will again be traversed by impulses. However, when these nervous impulses reach the synapses along the pathways traversed, they will be caused to diffuse over associated pathways, owing to a resistance of synaptic processes brought about as the result of fatigue. In this way we account for the primary passage of impulses over certain pathways and the subsequent diffusion of these impulses over into associated pathways. And each time that an individual is aroused to a dream state we may suppose that the nervous impulses are caused to traverse the same pathway but that in the subsequent diffusion which occurs the nervous impulses are drained out over different association pathways than the ones which they traversed during a previous dream state. Again, we might attribute this last mentioned fact to a fatigue that is caused to ensue to the synapses of the pathways traversed in a previous dream and that in later dreams the nervous impulses are, in this way, forced to seek an outlet over another set of associated pathways.

The above completes our description of the mechanism of dream state activities. It now remains to consider dream phenomena from a utilitarian standpoint. In other words, have dream phenomena a value as a means of gaining an

insight into the condition or the nature of an individual's mental or physical life; and if so, in what way do they manifest this value? Bjerre, describing Freud's conception of dreams, says, "He is of the opinion that the dream always contains the realization of an unconscious wish and, more decidedly, of a sexual wish. And he believes that the neurotic in a similar way lives out his repressed impulses in the form of nervous symptoms. Unfortunately I cannot here take up this point, which at first glance seems preposterous. It must be handled in a far broader connection and with a far deeper investigation into Freud's line of thought than is possible here in order to get any clear conception of what it implies. There is less use to stop at this disputed question, as the researches of later years seem to me to show the impossibility of supporting the idea as Freud formulated it." It is obvious here that the arbitrary assumption that all dreams must contain the realization of an "unconscious wish," and this of a sexual nature, disagrees altogether with the opinions maintained in the present paper. According to these last, a dream content need not be significant of either a wish fulfilment or a sexual wish. In fact, we can say that in most instances it is neither significant of the one or the other. To us, the dream is significant from two standpoints, from a cerebral and from a physical standpoint. From the cerebral standpoint, the dream manifests to us the presence of incomplete adjustments which an individual was desirous of completing, either from a viewpoint of advantageousness or from an urgent demand of necessity. From the physical standpoint the dream manifests to us something of the condition of an individual's general bodily tone. It is possible to gain an insight into what is the general nature of an individual's problems of adjustment by means of a word association analysis, a subject which will be considered presently. On the other hand, the manifestations in dreams of different types of thrills, such as positive active, positive passive, negative active, and negative passive, afford to us an insight into what is the condition of an individual's general bodily tone.

In the study of dreams from either of these two standpoints, cerebral or physical, the use of "symbolisms" as a means of interpreting our findings is a practice to be avoided because "symbolisms" as phenomena have no place in a physiological conception of cerebral activities. To us the contents of dreams should represent the revival in part of what were actual experiences; we might term such a revival as being a "fragmentary revival" of a certain group of brain-cell impressions or dis-

positions. That is to say, if in the past we observed a man wearing a certain style of hat or clothes we might recall the hat, the man's face, his clothes, or any other part or parts of the given event without remembering the whole. Such partial recalls are what I have in mind when using the term "fragmentary revival." Again, the part that feeling states play in determining what shall be not alone the content but the activities of this content in a dream has already been described in this paper. In dream states, as in consciousness, it is the general bodily tone that determines what the feeling state shall be. Ballet depicts this fact where, in describing the dreams of neurasthenics, he says, "*Dreams* are very frequent; they are almost always disagreeable, and the patient finds himself in a painful position in them; he is witnessing some frightful drama and runs the greatest dangers, or else he is the victim of a serious accident, sees himself pursued by assassins, or is present but helpless." It is obvious that what Ballet is describing here are negative passive thrills, which indicate feeling states that are associated with a markedly lowered general bodily tone.

As a lesser conscious phenomenon that is closely allied to night-dreams, which we have been considering, are what we term "day-dreams." Day-dreams resemble in some respects what we described as "marginal habits." Like these last, they occupy a so-to-say "borderland" state between the accentuated conscious and the lesser conscious states. Unlike night-dreams, day-dreams are subject to the influence of external objective stimuli. However, like night-dreams, the contents of day-dreams may in part manifest the presence of a diffusion of nervous impulses in an incoördinated way through associated pathways of a given brain-cell group, or what we shall hereafter designate as a "brain-cell mechanism." Given a stimulus to certain groups of brain-cells in a "mechanism," the nervous impulses may, instead of diffusing in a coördinated way through associated pathways to other brain-cells, manifest a disordered diffusion.

In order to understand the physiology of the mechanism of day-dreams it is necessary that we consider certain phenomena which are present in them and which we speak of as "association processes." However, in describing association processes it will be necessary to introduce two new conceptions upon which we will base our description of all other associated phenomena. One of these newer conceptions is what I term "objective sensorial memories," and the other "subjective sensorial memories." Objective sensorial memories we may

conceive as being those brain-cell impressions, or impressed dispositions, brought about as the effects of sounds, tastes, sights, odors, or of feelings such as hardness, softness, or any other attributes referable to external objects. Those processes which are spoken of as "association by contiguity," "association by similarity," contrast, etc., may be considered as being secondary association phenomena descriptive of "objective sensorial memories" in some way, and may for this reason be classed under the general heading of "objective sensorial association processes." The other of these two newer conceptions which I have termed "subjective sensorial memories" we may conceive as being those brain-cell impressions, or impressed dispositions, brought about as the effects of certain feeling states, such as joy, anger, illness, indifference, etc., all of which feeling states are related to an individual's general bodily tone and which in addition may be said to be the connecting or associating factor of all objective sensorial memories in some way. For descriptive purposes we may classify all associations from the standpoint of their related feeling states under the term of "subjective sensorial associations." However, both objective sensorial and subjective sensorial associations are so intimately related that a division of them into two processes can only be postulated for the purposes of description.

Returning to our consideration of day-dreams, we may explain their mechanism by the use of the above mentioned phenomena. We may say that as a result of a certain objective stimulus or the objective sensorial memory of a past stimulus, brain-cell dispositions are aroused, and in accordance with what is the condition of an individual's general bodily tone at the time of this stimulus certain other brain-cell dispositions are caused to be aroused—by association pathways. Just which pathways will be the one to become initially traversed will depend upon the feeling state of the individual at this moment and the associations with which this feeling state is most intimately related. If the individual is in a high state of general bodily tone his associations to a stimulus will be of one kind. If he is in a lowered state of bodily tone his associations will be somewhat if not altogether different. It is in instances of the latter that we most commonly find day-dreaming occurring. We may assume that as a consequence of a certain stimulus being experienced by an individual whose lowered bodily tone causes him to associate this stimulus in a certain way, the individual will have a train of thought aroused in him that in no way is directly related to the immediate stimulus. That is to say, the nervous impulses will

traverse thereafter association pathways and arouse certain brain-cell dispositions which, while being connected to the present stimulus by means of a certain subjective sensorial association, are not related in any way that we can recognize by any objective sensorial associations. The former would indicate an association by feeling states; the latter would indicate an association that we might account for by similarity or by contiguity, although even here feeling states would have a less obvious associational importance.

The difference here between night-dreams and day-dreams is that in the former certain feeling states may be influential in determining which of the experiences of the previous waking state shall be aroused in the dream and these feeling states thereafter determine the further content of the dream and its activities; while in the latter, a certain external stimulus, or a certain internal stimulus such as an objective sensorial memory image, may, as the result of a certain feeling state present at the time of the stimulus, serve to initiate the content of a day-dream and to influence its activities. Again, the former is less subject to the influence of outside forces than is the latter, although so far as the influence of the feeling state is concerned in deciding what the content and the activities of this content shall be it is the same in both the night-dream and the day-dream.

Passing now from a consideration of dream psychology, in which we attempted to explain Freud's theories from the standpoint of physiological conceptions, we will next take up the consideration of certain phenomena of psychoanalysis as described by Jung, making our interpretation of these from a physiological standpoint as we proceed. Word-association analysis is to most of us, perhaps, the best known of Jung's contributions to the study of psychoanalysis. For this reason we will confine our consideration to it, selecting "complexes" as our first factor for description. It is very important that we gain a clear conception of the nature of "complexes" because of the fact that they are the most fundamental of all factors upon which the phenomena of word-association analysis are based.

Hart, defining what a "complex" is, says: ". . . It is a system of closely connected ideas, with a strong emotional tone, and a tendency to produce actions of a certain definite character." If we will recall here Bagley's definition of an apperceptive system, viz., "Each system represents an adjustment to a phase of environment, which adjustment is constant with us while we are in a certain mood," it may be noted

that complexes and apperceptive systems are strikingly similar, if not the same phenomena. Just as in apperceptive systems an object may mean different things according as a primitive or an acquired meaning is apperceived in reference to this object by an individual, likewise in complexes an idea, object, or word, etc., is interpreted according to the complex which is aroused in an individual in reference to the given stimulus.

Therefore, when we explain a complex in terms of physiology, we may assume that the mechanism is the same as it is in apperceptive systems. Physiologically we may say that a complex is a system or group of brain-cells which have been individually modified in structure by certain impressions, or impressed dispositions, as the result of certain stimuli, and that each brain-cell of this system is closely connected with every other one by association pathways. Further we are to assume that certain dispositions of brain-cells in every system are more intensely affected than are others in this same system and for this reason are more readily revived upon subsequent stimulation than are others in the same system. Again, every brain-cell disposition is the seat of the two kinds of memory which we have previously described, namely, objective sensorial and subjective sensorial memories. In reviving these brain-cell dispositions these last two mentioned factors are the ones which exert the greatest influence in determining what sort of reactions they shall manifest. All the various terms which we find mentioned in regard to word-association analyses, such as "faulty reaction," "perseveration," "clang reaction," "predicate type reaction," etc., are descriptive terms of objective sensorial and of subjective sensorial memories.

If, for example, we find in a word-association analysis a reaction as follows:—

Stimulus word	*Reaction*	*Time*
Coloured	painter	6.8

we will have what a psychoanalyst calls a "delayed reaction time," since from 1.8 to 3 seconds is postulated as being a normal reaction time, the variation of time standards differing somewhat with individuals. Delayed reaction times denote to a psychoanalyst the presence of what is termed a "conflict." By the term "conflict" is meant an antagonism existing between two complexes.

Physiologically, we would describe the above phenomenon by saying that a block, due to resistances offered by synapses, was present in the association pathways connecting the brain-cell dispositions aroused by the stimulus word with those brain-

cell dispositions with which it was most intimately connected, or associated in a given brain-cell mechanism. The delayed reaction time was due to this blocking, which caused the nervous impulses aroused by the stimulus word to be dammed back in the pathway and finally diffused over into other associated pathways. This diffusion over into other pathways caused the revival of those brain-cell dispositions, the effects of which we observe in the response word "painter." The word "painter" would for us, mean the recall of a fragmentary portion of a past experience which was associated by similar feeling states with the present experience. In other words, this past experience of which the word "painter" is a recall of a fragmentary portion is connected with the present experience by means of subjective sensorial associations. The words of themselves would mean the revival of certain brain-cell dispositions whose contents manifested certain objective sensorial phenomena. As we note, objective sensorial memories determine the content of given brain-cell dispositions; subjective sensorial memories determine the activity, association, or behavior of this content.

Selecting another association analysis phenomenon, that of "repetition," we will cite the following as an example:—

Stimulus word	*Reaction*
Sin	men sin
Repentance	men repent
Love	men love

Meumann, describing this phenomenon, says, ". . . When we are fatigued or otherwise unfavorably disposed in body or mind, our ideas and our activities tend to become repetitive and persistent because we no longer possess sufficient energy to apprehend differences or to react in a discriminating fashion. In experiments dealing with the reproduction of ideas, a fatigued observer tends to acquire a persistent form of verbal apprehension,—mere successions of auditory ideas without meaning,—or a stereotyped form of verbal response,—rhymes or transpositions." In an individual whose chart record is similar to the above quoted one we may say that his objective sensorial associations are conditioned by a state of lowered bodily tone, either localized within the brain or as a general physical condition. We may differentiate between a mere repetition of the stimulus word and a stereotyped response of the same word to all stimulus words by saying that the latter marks a greater degree of lowered bodily tone in an

individual. Another association analysis phenomenon which we may attribute to the same causes are "clang reactions." The tendency of an individual to respond to stimulus words with "clang reactions" increases with fatigue or distraction. In "clang reactions," "rhymes," "repetitions," and "stereotyped word reactions," we note that these phenomena manifest their objective sensorial characteristics more prominently than they do their subjective sensorial characteristics. In all instances we may attribute this manifestation to the fact that owing to a marked degree of resistance of synapses that is generally prevalent in such conditions, the course of nervous impulses over association pathways is greatly interfered with. The condition is analogous to that in which we find an individual manifesting negative passive thrills and, again, like this last it may be brought about by a state of localized or of generally lowered bodily tone.

"Perseveration" is a third word-association analysis phenomenon which we may cite. When in an association analysis chart we find reactions like the following:—

Stimulus word	*Reaction*	*Reaction-time*
Water	Drink—drinker	:2.4
Prick	needle	:3.6
Angel	heaven	:2.6
Long	ship	:4

we may attribute the last three delayed reactions as being due to a "perseveration" from the word "drinker." Meumann defined "perseveration" as "that emergence of ideas which consist in the fact that shortly after an idea has disappeared from consciousness it possesses the capacity to force its way into consciousness again and to interrupt the prevailing course of ideas. The essential conditions for this are that we have concentrated our attention long and intensely upon the idea, that the idea has excited our feelings intensively, and that the circumstances which formerly brought about the reproduction are still, at least partially, present." Again, we may describe the phenomenon by saying that owing to an excessive activation of nervous impulses that a particular stimulus word has caused to occur within a certain complex or system of brain-cell dispositions, a subsequent stimulation of other complexes or systems of brain-cell dispositions is interfered with by the impulses which continue to traverse the association pathways of the first complex or system of brain-cell dispositions which we aroused by a certain stimulus word. The so-to-say "eddy current" of nervous impulses that such a

condition of two or more systems of brain-cell dispositions attempting to function at one time bring about is the same here as that condition which we commonly speak of as "confusion." In other words, perseveration and confusion are due to the same phenomenon.

A fourth phenomenon which may be observed in word-association analyses is the oftentimes peculiar reaction words given in response to stimulus words. In this phenomenon the reaction words seem to be strangely unrelated to the given stimulus words to which they are a response. As examples, we may cite the following:—

Stimulus word	*Reaction word*
Table	ink
Man	lord
Music	room
Foot	careful

Meumann explains this phenomenon by saying, "What particular idea shall appear in consciousness in any particular case is a matter which is not determined solely by the associative connections possessed by the ideas which are present at the moment; quite as much influence is exerted by the general condition of the individual, his freshness or fatigue, the fact that he is well-disposed or ill-disposed, the total group of impressions and ideas which are clearly or obscurely present to his consciousness, his feelings, and everything else that may be designated as his conscious constellation." By the term "conscious constellation" Meumann means here those systems of brain-cells with their dispositions consisting of both objective sensorial and subjective sensorial memories, and the closely connecting association pathways existing between them.

If in selecting the example "table—ink" from the above word-association analysis chart we suppose that the individual, at the time of the analysis, was in a certain condition of general bodily tone, a physiological interpretation of this phenomenon of word-association becomes possible. We may then say that as a result of a certain condition of general bodily tone that the individual was in at the time of the experiment he associated the stimulus word "table," an objective sensorial memory, with the word "ink," another objective sensorial memory, and that the feeling state that was present at the time of the given stimulus word "table" was, as a subjective sensorial memory, the determining factor in arousing by association the word "ink;" which likewise had associated

with it an analogous feeling state in the form of a subjective sensorial memory. If the individual happened to be in a different condition of general bodily tone at the time of the experiment, the word "table," which as an objective sensorial memory had associated with it a certain feeling state or subjective sensorial memory, would have revived by association pathways a set of brain-cell dispositions with altogether different objective sensorial and subjective sensorial memories. These revived or aroused brain-cell dispositions might be conceived by the individual in a conscious way as the word "food," "furniture," etc. It is the feeling state of the individual at the time of the association analysis that determines what the reaction word shall be. The reaction word, as has been already described, represents the recall of a fragmentary portion of a past experience the revival of brain-cell dispositions which were created by the stimuli of a certain past experience and which, on account of similar feeling states being present in both instances, the past and the immediate, serve to recall each the other by these feeling state memories or, as we have technically termed them, "subjective sensorial memories."

In all of the foregoing phenomena of word-association analysis, which we attempted to explain from a physiological standpoint, no cognizance was given to "symbolism" as a means of interpretation of the reaction words. If in word-association analysis, as in dream analysis, we intend to accept physiological postulates in accounting for the phenomena found present, it is obvious that the conception of these phenomena from a standpoint of "symbolism" is an hypothesis to be rejected. In a physiological conception of word reactions in association analysis it is necessary that we consider each reaction word as the recall in part of a past experience. That is to say, each reaction word must mean to us the revival of certain brain-cell dispositions, the most intensely affected out of a certain group of brain-cell dispositions which are related with stimuli of past experiences. We have termed this revival of brain-cell dispositions a "fragmentary recall" because it represents but a fractional part of all the brain-cell dispositions affected by the stimuli of the given experience at the time. Further, we have assumed that these most intensely affected portions of the brain-cell group, like its lesser intensely affected portions, are the seat of not only certain impressions or dispositions of an objective sensorial character but that it likewise contains certain effects in each brain-cell disposition of the feeling state that the individual experi-

enced at the time. The memory of these feeling states or these feeling state dispositions we call "subjective sensorial memories." Both objective sensorial and subjective sensorial memories play a rôle in each word reaction of a word-association analysis, just as they do in the phenomenal activities of dreams. For this reason it is unnecessary to resort to a symbolic interpretation of facts which in themselves are representative of given experiences. And this last mentioned fact applies to those association analysis phenomena which we have not considered in a physiological way in the present paper, such as "predicate type reactions," "definition type reactions," etc., which as objective sensorial memory phenomena are of interest to us especially from the standpoint of their value as tests of intellectual development. However, we will discontinue any further consideration of word-association analysis and will devote the rest of the present paper to a consideration of psychoanalysis from the standpoint of Adlerian theories.

Psychoanalytic phenomena from the standpoint of Adler's theories differ greatly from the theories of this same science as presented by Freud and by Jung. In some respects Adler's theories resemble those offered in the present paper since they are based upon organic conditions and the effect of these upon the cerebral activities. His description of the phenomena comprised in his theories is divided into two general postulates: that of the "manly protest," and that of the "assurance mechanism." Everything otherwise described is presented in relation to one of these two postulates. William A. White, in his introduction of Adler's book, "The Neurotic Constitution," writes of the "manly protest," "It is as if the neurotic said to himself, 'I wish to be a complete man.' This protest arises on the basis of a feeling of inferiority and an effort upon the part of the neurotic to correct this feeling, which he does by so ordering his life, so regulating his every act, that he may find that security of which his feeling of inferiority has robbed him. This is the fictitious goal of the neurotic and the fundamental and ultimate cause of his symptoms when he is no longer able to succeed, when failure threatens in his efforts to deal with reality." Also, "The neurotic constitution founds in an inferior organ, the inferior organ produces a feeling of inferiority, the feeling of inferiority—the masculine protest—becomes the fictitious goal of the neurotic, whose symptoms result from an effort to mould reality along this false pathway." Describing the "manly protest" as it occurs in children Adler remarks, "In his negativistic behavior, in his obstinacy and refractoriness, he often finds a gratification of

his consciousness of his own powers, thus ridding himself of the painful realization of his inferiority." The descriptions of the "manly protest" by these two authorities are sufficient to afford a clear conception of the phenomena in question. Less obvious, however, is the reason for the use of the term "manly." This last is based upon the peculiar interpretation that Adler gives to the terms "masculine" and "feminine," a conception which is somewhat mythical or symbolic in its nature. To Adler the term "masculine" is symbolic of something "superior," "up," "strong," "authority," "above," etc.; while the term "feminine" is symbolic of something "inferior," "down," "weak," "obedience," "below," etc. In other words, Adler makes masculinity and the attributes which he associates with it the symbol of superiority, and femininity, along with the attributes which he associates with it, a symbol of inferiority. Tridon, describing Adler's theories, remarks, "Every human being, normal or abnormal, is born with what Nietzsche calls the will-to-power, and what Adler calls the will-to-be-above. Normal beings simply exert their utmost endeavors to reach that goal. Abnormal people, on the other hand, are likely to be worried in the course of their quest by a feeling of inferiority due to some real or imagined organic deficiency." According to Tridon's description, we can understand that what Adler describes as an "assurance mechanism" must be conceived as being symbolically "feminine" in its nature. Bjerre clearly describes the "assurance mechanism" by saying, "The teacher who has too much to do faints in the middle of the lecture, is carried home, gets a free day, and thus assures herself against overtiredness." Adler describes the "assurance mechanism" where he writes, "The tendency to exaggerate and emphasize existing defects plays an important rôle in the psychology of the neuroses. An appearance of weakness, suffering, incapacity, and uselessness results from this manner of presenting actual defects because the neurotic is compelled by the mechanism which controls him to conduct himself unwaveringly in such a manner as to feel as though he were sick, as though he were effeminate, inferior, neglected, injured, sexually over-excited, impotent or perverted." According to Adler, the "assurance mechanism is a compensatory factor to the "manly protest." That is to say, when the latter fails the former is brought into use. For this reason Adler speaks of both of these phenomena as consisting of "ready-for-use" attitudes, used as a means of satisfying a "craving for security," and as being the means whereby the individual seeks to modify reality to suit the demands of

his "accentuated fiction." In the foregoing brief description of Adler's theories we have a review that is sufficient for the purposes of a criticism that we shall now submit them to.

As Bjerre has written, "However many valuable contributions to our knowledge Adler's doctrine concerning neurosis has given us, on the whole it seems to me as little able to serve as a foundation for the needs of psychotherapy as the Freud system itself." Also, "It may thus be seen that Adler asserts finality with that same ruthless one-sidedness with which Freud emphasized casuality as the driving, creating, power in human life." Just as in our consideration of the Freudian conception of psychology we found it impossible to attribute all forms of human behavior to a sexual factor, likewise in Adler's conception of psychology we find it impossible to accept the theory that all forms of human behavior must be attributed to some organic inferiority with a psychical compensation. In interpreting Adler's terms in a physiological way, we may say that feelings of inferiority represent a form of disturbance of the sense of well-being, due to a condition of lowered bodily tone and without necessarily meaning here that this disturbance is of a so-to-say "social jealousy" order of phenomenon. The term "manly protest" may be conceived as meaning a manifestation of negative active thrill phenomena, such as "aggression," "greed," "cruelty," "anger," "revengefulness," etc. The term "assurance mechanism" may be conceived as meaning a manifestation of negative passive thrill phenomena such as "fainting," "humility," "submission," "bashfulness," "invalidism," etc. Any ideas of "masculine-feminine," "up-down," "above-below," etc., in the sense that Adler uses these terms must be rejected in an interpretation of behavior from physiological conceptions. What Adler terms "a craving for security," will for us mean a thrill craving, a craving for physiological readjustment of a condition of lowered bodily tone, the cause of which may primarily be either cerebral or generally systemic in origin. The term "accentuated fiction" may be conceived as meaning the ideal of physiological well-being as it is sought in attempts at physiological readjustment by thrill phenomena of questionable value such as anger, greed, grief, invalidism, etc., on the one hand and by alcoholism, narcotism, day-dreaming, sexual excesses, etc., on the other hand. In such conceptions as these "symbolism" as a means of interpretation is valueless. Also, the conception that an organic inferiority "never occurs as a result but always as a preliminary condition," as Adler re-

marks, is another postulate which we should reject. Not only is it possible to conceive that an organic inferiority may be an acquired condition but, in addition, we need not conceive such an inferiority as being necessarily a permanent condition in any way. Again, it is not necessary to assume that every organic inferiority has a direct effect upon the brain in the sense that Adler mentions it as having. In the greater majority of instances the only effect that an inferior organ has is that it serves to maintain a certain amount of lowered bodily tone while it is in a condition of disease or disorder, and this lowered bodily tone manifests its presence psychically in the form of a thrill craving from time to time.

In making a final survey of the phenomena which have been considered in the present paper, we observe that it has been possible to conceive them in each instance from the standpoint of physiological conceptions. Consciousness was shown to be nothing more than that state of awareness necessary in the processes of adjustment of the body to certain external and, in some instances, internal stimuli. Lesser consciousness we found to be that condition of lesser awareness which remains after a complete adjustment has been made, or, in the event of an incomplete adjustment, is that state of lesser awareness that remains after a particular stimulus has ceased to act upon the brain. Marginal habits, we observed, were phenomena which occupy a sort of "borderland" situation between states of accentuated consciousness and states of lesser consciousness. Again, feeling states were shown to be very important factors in all forms of cerebral activities, and in the form of "subjective sensorial memories" they are the means whereby we may explain certain processes of associational activities. It was in explaining in a physiological way the various theories of Freud, Jung, and Adler that we found the conceptions of "objective sensorial" and "subjective sensorial" memories useful. Furthermore, these two phenomena were shown to be the means whereby we may explain in a physiological way all those factors that in psychoanalytic work have been interpreted by symbolic hypotheses. Finally, in using the ideal of physiological well-being as the basic factor by which to explain not only normal but abnormal modes of conduct, and in observing the part that thrill cravings and thrill manifestations play in their relation to this ideal of physiological well-being, we at once observed the broader conceptions that such theories permit over those which are found in the present schools of psychoanalysis.

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NOTES ON METHODS OF ISOLATING SCIENTIFICALLY THE OBJECTIVES OF RELIGIOUS EDUCATION

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In no realm of education have we yet guided ourselves as largely as we should by clearly conceived and adequately evaluated objectives. Custom has chiefly pointed the way, and when we have thought of our work in relation to ends these ends have mostly been accepted on blind faith. We have taken it for granted that certain ends were worth working for and if any one questioned these ends we merely smiled at him as "queer." But, in the realm of secular education at least, the challenge to consider our objectives has become so loud and so insistent as at last to have compelled a hearing. And when we heeded this call and turned attention seriously to our objectives, we found them nearly all to be so vaguely conceived as to be affording us little practical guidance and many of them, even when conceived with a fair degree of clarity, impossible of actual attainment, socially illegitimate, or valid only for a certain few individuals instead of for the many who were made to pursue them. In the realm of secular education a fair and full consideration of objectives gives promise of multiplying many fold the efficiency of our educational efforts.

It seems that this promise is equally great in religious education. There is no realm in which custom more largely guides our practice, no sphere in which vague feelings rather than clear-cut intellect more dominantly prompts our reactions, no arena in which we more frequently go off half-cocked, than in that of religious education.

The function of definite objectives in education can perhaps be most clearly seen through the analogy of military activity. In war it is not sufficient that a general know the manual of arms, that he be able to command due respect and obedience from his subordinates, that he keep his supply train moving systematically, or even that he be able so to inspire his soldiers with hope and courage that they be willing to make uncounted sacrifices to win the battle. He is made a good general only secondarily by these routine and inspirational factors, but pri-

marily by his power in *military strategy*. He must be able to study the situation objectively and intelligently map out policies. He must mark out specific and attainable objectives for definite times and keep his whole machinery moving with precision through this schedule to his ultimate goals. If he does not keep his maneuvers carefully aligned with such well-considered objectives he is sure to waste time, supplies, and men in fruitless undertakings. For even if he win in these unplanned raids, his victory has no value with reference to the total situation and often even weakens his position by putting a part of his line in an unnecessarily exposed position.

In the same way the carpenter, the bridge builder, the mining engineer, and every other type of efficient workman, guides his activities by reference to definitely conceived and evaluated objectives. He knows from the first just what he wishes to accomplish and selects all of his tools, his materials and his procedures with reference to the attainment of these ends. If he did not do so, but on the contrary merely plunged in with whatever materials came most easily to hand and with whatever activities instinct chanced to prompt, it is easy to see how wasteful of time and materials and how completely devoid of useful results would be his efforts.

Yet in more cases than not it is in just this latter way that we have proceeded in teaching. We have taken the curricular material that tradition suggested, or that was easiest to use, or that temporary fad proposed, and have plied it with the hope that it would lead us somewhere worthwhile if we only kept at it long enough. The result has been the waste of a large proportion of our educational efforts. In secular schools we have, on this basis, put in years of time teaching children languages they would never use, mathematics that would never function, or history that would not influence their conduct; and have omitted to give them language, mathematics, and history that *would* prepare them for the meeting of emergencies predictably destined to confront them, to say nothing of many other types of training indispensable for efficient living hitherto completely untouched by the school. In religious education this lack of guidance by scientifically evaluated objectives has caused us not only to omit many things necessary for a complete religious life but even to do many things that actually militate against the cause they are expected to further.

So education must be constantly guided by reference to the utility of its contributions in the future life of the pupil—understanding that the future begins at once and lasts on.

In the life they are living all about us men are continually being confronted with countless problems demanding solution or, if you prefer, with countless exigencies demanding adjustment. It is the business of education to prepare its subjects with the adjustments necessary for meeting these emergencies —the carpenter with the skills necessary for fitting his boards together into a house, the physician with the knowledges necessary for classifying the diseases submitted to his judgment and for prescribing for them, the citizen with the ideals and interests necessary to prompt him to participate in foreseen essential political functions, the religious man to retain his equipose in the face of certain forms of discouragement sure to depress him, and so on. Fitnesses for meeting these definitely conceived and expected situations constitute the objectives of education.

Now under what conditions can we keep all of our educational efforts directed continually toward the preparation of reactions for such real situations in life? Evidently only as we go out into life and make a survey of the problems actually found there. We must know what are the exigencies against which men are struggling before we can know what sort of advance training will help them better to meet these exigencies.

But if these discoveries are to help us much the objectives revealed must be analyzed out in such detail as will actually suggest subject matter and methods. It will not do to set up merely such ends as initiative, imagination, resourcefulness, and piety. These are such large concepts that they can not suggest definite teaching materials nor specific procedures. Not even can we stop with such goals as courage, honesty, and loyalty. These are generic terms that cover many quite different reactions. We need to know the particular situations in which courage or honesty or loyalty is expected to have occasion to function in order that these situations may suggest to us means of building up the particular courages, honesties, and loyalties requisite for coping with these situations. And in the same way we need to have isolated and analyzed out in detail all the other types of fitnesses that a study of living, as it actually goes on today, reveals as essential to maximum efficiency.

And we must be careful, too, to make this analysis a sociological one, not merely a psychological one. There are at present a few prominent writers who seem to think that they have dealt adequately with the problem of objectives when they have analyzed the functions of education into the so-

called forms of conduct-control—knowledge, habits, ideals, etc., according to one type of classification and impression, fragmentary remembrance, varying apperception, specific discipline, and general discipline (or transfer) according to another. Such analysis of the ends of teaching is obviously very valuable—is, indeed, indispensable. It does, in so far, suggest some procedures and, without doubt, enables us to make much more headway than we could make if we did not thus analyze our goals. But as long as this analysis passes lightly over the question as to *what* ideals, *what* habits, *what* impressions are needed it clearly goes only half the way. It is still in the realm of blind faith in respect to *which* of the elements within any of these types it is worth our while to undertake to develop, and will remain in this realm of blind faith until there is added to this psychological analysis a sociological one.

It would, of course, be untrue to say that educators have not given any thought to their sociological objectives. They have always considered more or less what they wanted to make out of their wards, and have tried to adjust their materials and their methods to these ends. Some of the demands of life have been so obvious and so insistent that schoolmen could not overlook or ignore them. Some others have been readily discoverable by a little reflection. This large, loose type of observation is enough to give us, with a fair amount of reliability, a good proportion of legitimate objectives. But this procedure has all the defects of the philosophical method, namely, large play for the personal equation of the thinker, generalizations that overshoot the mark, large areas of completely overlooked phenomena. And the lack of parallelism with life, the fragmentariness, and the distorted emphasis of past and present education, are due largely to these defects in the loose philosophical method of discovering objectives. We (as educational program makers) need to replace, or at least supplement, this loose method with a method that will be objective, impersonal, and systematic.

The haphazard method hitherto in vogue has certainly left us with vaguely defined and uncertain objectives for religious education. In fact I must confess to helpless confusion as to what the Christianity into which most of us are trying to educate the oncoming generation really is. I was brought up in a conservative community and had preached into me the doctrines that belonged to a conservative church in an isolated community. Naturally I have later revolted against these provincial teachings. In consequence members of this church

have accused me of heresy. But when I have accepted this accusation, and have spoken about my convictions as a matter of course to other persons in this and other churches, they have been only amused and have said my attitude was not at all unorthodox, but that the persons who had defined orthodoxy for me were only provincial old fogies who do not understand what Christianity really means. But the next day I have found this opinion reversed by others and a third standard, different from either of the other two, set up, and so on until I have become convinced that nobody knows what orthodoxy is, even within any one church—that in fact there is no objective standard but each man's personal equation largely governs. And there is only a little less certainty about what the Christian is expected to do than about what he is expected to believe, except in respect to some extremely large features in both cases.

It is toward such vaguely defined ends that we are trying to train our wards. No scientist would allow himself to remain in such a hopeless state of confusion and disagreement with respect to matters fundamental to his science. If there were contradictory statements made regarding the structure of the jack-in-the-pulpit, for example, he would at once go to the objective evidence to settle the matter. He would collect a thousand specimens, compare them, and generalize regarding the structure on the basis of what he actually found common to the specimens observed.

In this same objective way we must find what is really fundamental to Christianity, and what is only accidental and personal, if we are ever to clear up the hopeless confusion that now envelops us. (I use the narrower term Christianity here, and shall do so from here on, instead of the larger term, religion, merely for the sake of convenience and definiteness. What is said of Christianity would apply equally to all other forms of religion). As the botanist goes to typical plants themselves, instead of to an *a priori* philosophy about plants, to discover what the plant in question normally is, so we must go out and study the best Christians to find out what normal Christianity is, and hence to discover the specific objectives to be worked for in our making of Christians. Any definition in terms of what speculation indicates Christians *ought* to be is subject to all the dangers of personal bias, and of impracticality, mentioned above. Likewise any definition through the historic literature of Christianity is likely either to be so schematic and general as to fail to set specific objectives for training or, if detailed, to be thrown out of alignment

with the problems of the present by reason of evolution through the lapse of time.

To make this sociological approach to the definition of Christianity demands, of course, that we have a direct though unanalyzed sense for Christianity that enables us to recognize it when we find it. But we do, as a matter of fact, do that very thing. We do measure our own Christianity, and that of others, over against the behavior of certain men and women whom we feel to be typical Christians, and are satisfied to the extent that the ones measured stretch up to the measuring rod.

Such men and women, imbued with the spirit of Christianity and confronted with the normal exigencies of life, are adjusting themselves well to these exigencies. Their Christian lives are working. They are the *fit* whom social evolution will select. The lives of these fit should define for us current Christianity. The character of their abilities indicates what sort of ideals, habits, attitudes, knowledges, etc., we should seek to train into our wards; and the extent of their achievements sets for us reasonable expectations. If we can carry our pupils in fitness beyond the point attained by these best Christians well and good, but it will be beyond in the same direction, they pointing the way.

To this suggestion that we should seek a sociological, rather than a philosophical, definition of our objectives in Religious Education there would probably be little objection, especially since it is the method we have anyway long employed. But if we are to employ this sociological method scientifically we must employ it systematically. What this demands is the theme of the remainder of this paper.

Fortunately the natural scientist is able to show us how to systematize our observation. We can take over from him several methods that he has long used with marked success. The one that will probably lend itself best to our inquiry is the method referred to a little while ago in speaking of how the botanist would settle for himself a question of the structure of a given plant. It has been known, since the days of John Stuart Mill, as the Method of Agreement.

An illustration or two of the use of this method in science may be appropriate. When Sir David Brewster wished to ascertain whether the color of mother of pearl is due to the form of the surface of a body rather than to its substance, he took impressions from mother of pearl in wax, balsam, fusible metal, lead, gum arabic, isinglass, etc. In all these cases the form of the surface was kept the same but the

substance widely varied. When to all these varied cases he found the irridescent colors common, he concluded that the form and not the substance is the cause of the color. In like manner the agriculturalist studies the value of a certain fertilizer by applying it to many different crops and conditions and observing what results are common to all the cases; the physician assures himself of the potency of antitoxin by noting the extent subjects treated with it agree in resisting disease; or the anthropologist satisfies himself as to what traits are fundamental to primitive society by comparing many tribes and studying to what extent the traits in question are found in all of these tribes. The method is, then, to bring together many and varied yet typical specimens of the thing studied, to compare these, and isolate essentials on the basis of agreement found in these specimens.

The application of this method to the determination of what is essential to Christianity is obvious. We shall need to pick out a hundred, or a thousand, *best Christians* and study their characteristics. We shall need to observe their habits, their ideals, their beliefs, their attitudes, etc., and compare these so as to ascertain what ones are common to all, or nearly all, (and hence essential to Christianity) and what ones are merely accidental and personal. And, to make our survey of value, we shall need to make it detailed. We shall need to note what the Christian does toward his family, what he does toward the state, what he does toward his fellows in his business relations, etc. Becoming still more specific under each of the above heads, we shall need to know: what is the Christian's conduct in respect to his own amusement, in respect to pressing ahead in business, in respect to clothing and the maintenance of appearance, in respect to eating and drinking and smoking and other similar matters, in respect to the maintenance of health, in respect to the pursuit of his personal culture in the form of music or travel or reading or the theatre. Regarding his family relationships we shall need to know how, in a number of specific respects, he treats his wife, how he treats his children, how he treats his parents. In his relations toward those in need we shall need to note: how he deals with those in economic need—the temporarily embarrassed or the permanently poor; those in need of friendship and of encouragement—the down and outs; the sick; those socially unfortunate—condemned criminals, unmarried mothers, etc.; prophets "without honor in their own country." And so on.

When we have noted and compared these traits in respect to 1000 typical best Christians from all walks of life and from

all parts of the country, and have isolated the ones common to large numbers of them, we ought to have a valuable guide as to the specific traits we should be trying to train into our pupils.

But in applying this method to our field we shall encounter many problems greater than those which confront the natural scientist. In the natural sciences the data are comparatively simple and tangible, and lend themselves rather readily to experimental manipulation, so that the observation of a single investigator can isolate the critical elements. But the sociological data with which we must deal are far more complex and the observation of no one judge is at all adequate to isolate from them the principles that make possible trustworthy generalizations. This for several very obvious reasons:

1. The personal equation of a single observer is sure to obtrude itself in this field. He will inevitably read into his observations some of his own predilections and overlook certain elements in which he is not especially interested. We need many judges to offset each other's personal equation.

2. Our data must come from all parts of the country—preferably parts selected by a scientific method of random sampling. Ordinarily one person could not collect such data.

3. Our data must come from all classes of men, to whom no one man would have sufficiently ready access.

4. The observations must be based on intimate acquaintance, and no one person could be expected to have a sufficiently intimate acquaintance with the behavior of men as numerous and from as varied status as the conditions of the study demand.

So we must gather our data by setting to search for it a hundred, or perhaps a thousand, observers of analytic mind in all parts of the country and from all walks of life, each observer guiding himself by an exhaustingly analytic scheme and each one holding himself strictly to reporting what he *personally knows* the "best Christian" he is observing *actually does*. His temptation will be constantly to pass beyond his observations and read into his subject what he fancies a good Christian ought to be.

When we get together these 100, or these 1000, reports from as many observers, we can classify the notations and, from the number of times the same trait has been mentioned, make out a list of the traits most nearly common and essential to the typical Christian, and also have some index of the relative importance of these traits.

Several other scientific methods would be available to supplement this Method of Agreement. (1) The Joint Method of Agreement and Difference. That would involve, on the part of the observer, drawing up a list of, say, ten typical Christians of his acquaintance and contrasting them with a similar list of non-Christians, comparing the two sets to find what traits are common to the former and lacking in the latter. Reports of these observations should be thrown together as above. (2) The Method of Concomitant Variation. This would involve ranking a number of Christians in the order of their merit and ascertaining what traits tend to increase in prominence as one moves up the ranks, many observers throwing their results together as in the other cases. (3) The Method of Job Analysis. This would involve enumerating the vital types of situations with which life confronts men and raising the question as to what sort of preparation is necessary for effectively meeting those situations. This method of job analysis is valuable in guiding vocational education, but when we attempt to apply it to the extremely broad field upon which Christianity touches the situation becomes so complicated that likely no headway could be made with it. (4) Another method, extremely useful in discovering objectives in such a realm as citizenship education or cultural education—The Method of Defects—would also seem to be inapplicable to such a complex area as that of Religious Education. So that the most promising method, on the whole, in this field seems to be the Method of Agreement described first, supplemented largely by the Joint Method of Agreement and Difference and perhaps to some extent by the Method of Concomitant Variations.

But all of this assumes that the religious educator must embark upon an investigation of objectives all his own. As a matter of fact his task can probably be immensely simplified if, instead of making an independent study, he will join forces with the general educator in the study of objectives he, too, must make. For the ideal religious man is only the ordinary efficient member of society with additions. He is a good citizen, a good workman, a good member of the moral order, and good in all other respects that make one an efficient member of society. To this common social efficiency religion adds only one unique element—that is, the appeal to its distinctive sanctions to reinforce and sustain conduct. Therefore in respect to the *content* of the righteous life the religious educator can merely take over the findings of the general educator, so fast as they are worked out, in respect to what are the

ideals, the habits, the biases, the knowledges, etc., essential to citizenship, to morality, to health, to vocation, and to culture. He can then make his contribution in the form of means for reinforcing these through the machinery uniquely available to the church. If he wishes to take part in the study of *content* objectives, he can do so in cooperation with the general educator.

In this division of labor there would thus be thrown upon the student of religious education, as his own necessary investigation, the burden of making a sociological study of the effect of appealing to each of the several types of sanctions historically resorted to by organized religion or available thereto. This is a matter hitherto passed over far too lightly. Observation readily shows that the church has made a practice of appealing to certain sanctions that, though sometimes useful temporarily, are in the long run absolutely ruinous to a stable religious life. Many sanctions that were once possessed of the utmost potency, and that retained that potency through the life of the individual, have now been outgrown and either appeal strongly to no one any longer or operate positively during one stage of life only to act as a boomerang in a later stage. It is foolish to blame men for this change. We must evaluate sanctions according to the extent to which they actually appeal to people as we find them. A sociological investigation is as essential here as it is in the effort to isolate objectives.

In this realm of the sanctions that influence men's conduct there are the greatest possible individual differences. It would be next to impossible to generalize for all men. But science does not compel generalization for a unit of unlimited extent. We can make our groups for whom we generalize as small and as homogeneous as we please. In general pedagogy we are learning rapidly to adjust our instruction to individual differences and there is every reason to believe that we shall need to do the same in religious education. A careful sociological study of the efficacy of sanctions in relation to type groups would certainly enable us to deal far more intelligently with the problem than we can without such study.

In studying the value of the several sanctions for such type groups we shall probably need to rely largely upon the personal questionnaire method, unsatisfactory as we all know this method to be. We shall wish to know of each respondent the manner and the extent to which each sanction influences him and the history of the efficacy of this sanction in his life. We must expect these reactions to be very different in

the case of the prophetic group—those persons who are strong in the virtues of initiative—from what it will be in the case of the conservative group—those strong in the virtues of conformity—but it is just these individual and group differences that will be most illuminating and suggestive.

Moreover we shall probably find it advantageous to supplement these personal questionnaires by the careful and analytic observations by others—by outsiders. These outsiders can study the apparent influences of certain sanctions in the lives of the subjects in question more impersonally and objectively than the subjects themselves can, and hence can keep a better perspective in respect to the motive forces operating in these people's conduct. If we can bring together a sufficient number of observations regarding the efficacy of the several sanctions, from a sufficient variety of subjects to be genuinely representative, and from enough careful judges to insure the elimination of the personal equation in the interpretation, these, when carefully interpreted, ought to yield us generalizations covering the type groups that will be of the utmost value in enabling us intelligently to bring religious sanctions to the reinforcement of conduct.

Certainly the efficiency of religious education will be immensely increased whenever the educator (preacher, Sunday school teacher, visitor) recognizes that the effective control of conduct demands two things: (1) Clear ideas as to just what is to be done and the necessary skill to accomplish it, and (2) the forces necessary to impel one strongly to the doing of this thing and to sustain him to the end of the task. The former are the content objectives and belong primarily to general education but must constitute the specific goals towards which religion drives and must be isolated by the religious educator in so far as they are inadequately isolated by others; the latter are the sanctions of conduct and belong primarily to religion.

A very important qualification must now be made to all that has been said up to this point. It does not follow that because a trait is essential for efficient living that either the day school or the church school must necessarily take a hand in its development. A great many essential traits are picked up merely by the way and as by-products to activities not specifically intended to be educational. With these the school, whether religious or secular, need have nothing whatever to do. The function of any school (and the church is in part a school) is strictly *residual.* Among necessary things of an educational character it need do only those that no other institu-

tion is adequately doing. So it is the business of the church as a school to seek out diligently those contributions which are left for it to make and to apply itself assiduously to making these. The residual function will obviously not be the same in all communities or among all sorts of people.

How can we find this residual function? The best method I know of getting at it is that urged by Professor David Snedden—namely, to break our population up, for purposes of construction of curriculums, into relatively homogeneous type groups, to estimate (on the basis of a sociological study) the prospective deficiencies of each of these type groups apart from the activity of the church, and to construct such a program of religious education for each group as will offset its threatened deficiencies.

Not only will it be necessary to make such *lateral* distribution of the residual objectives of religious education but to make as well what we may call a *linear* distribution. This will be made partly on a sociological, and partly on a psychological, basis. Some objectives have meaning only with reference to certain stages of life and not to other stages; some are stepping-stones to others; some can be realized more economically at one stage than at others. A scientific program will not, therefore, only inquire what objectives are to be realized in the whole process, but will also apportion these scientifically to the several levels of educational training at which they can be best attained.

The function of the church school as residual has, of course, its positive aspect as well as the negative one referred to a moment ago. Just as the school should not try to teach what does not need teaching, so, too, it should not leave untaught what needs teaching and yet what no other institution will teach. This positive residual function the church has performed reasonably conscientiously in the past, at least in spots. When, a century and a half ago, the poor had no opportunity for secular education, the church taught them to read, to write, and to cipher in the first Sunday schools. When primary schools, vacation schools, penny lunches, kindergartens, etc., were needed and not provided by other agencies, churches came to their support until the public could be induced to take them over.

This principle should be continued and extended. We have at present, for example, no continuation school for adults to help them meet intelligently the big social, political and economic problems of the day. As a residual educational agency it is therefore the function of the church to constitute itself such a continuation school, and, in its church services and

especially in its Sunday school, discuss these matters in lieu of other topics in such a way as to afford its members adequately clear ideas regarding them. Until these clear *ideas* are somewhere and somehow got it is next to useless for the church to undertake the building of the ideals respecting them which are its ultimate concern. Too often the idealization, which is the primary sociological function of the church, is left merely in the air. It becomes a vague and vapid emotionalism. It prompts, but to nothing in particular, hence leaves conduct practically uninfluenced. It is really useless to emotionalize, perhaps even worse than useless, unless that emotionalization is centered upon certain ideas sufficiently clear-cut that they can issue into conduct. If other institutions than the church will adequately clarify these ideas, well and good. But if they are not clarifying them, then any Sunday school lesson, or any sermon, must take on the necessary didactic form to do so if its program of idealizing and sustaining conduct is not to vanish into thin air.

In brief summary, I have tried to point out that religious education can make little headway until it isolates for itself specific objectives and continually drives toward these. Such objectives must be isolated through a scientific sociological study, not set up by the *a priori* methods of philosophy. For such isolation of the objectives of Christian religious education several possible methods were suggested, chief of which was the Method of Agreement in slightly modified form. But all educational program makers are now confronted with the necessity of scientifically studying objectives, and the religious educator and secular educator (it was contended) can perhaps make most headway if they throw together their efforts, the general educator carrying most of the load of isolating content objectives and the religious educator making a sociological study of the potency of sanctions with which to lend dynamic force to the conduct controls related to these objectives. When these specific objectives and their related sanctions shall have been found, the problem will remain to distribute training for them to optimum age levels and to the group that need such training, the church (as a school) confining itself (and stretching itself) to a *residual* educational function.

CHILDREN'S LIES[1]

By Henry S. Curtis

"What is Truth?" said Pilate with a sneer. The world has not yet answered his question. There are all degrees of truth and untruth. Few people know when they are lying, and truthfulness is one of the most difficult of arts. In its perfectness it can come only with a perfected social life, in which a spirit of love and helpfulness are universal.

Kinds of Lies

There are three fundamental kinds of misstatement which come more or less fully under the head of lies. They are all about equally misrepresentative of the truth, but they are not equally culpable, because they do not equally result from wilful intent to misrepresent, or do injury.

Misstatement: Accurate statement is a late and difficult accomplishment. It comes only with scientific training and few people have the ability for it. Most of us see the world only in spots and the great majority of it passes by us unobserved, or if seen we give it only a passing glance which shows us little. We need only to seek to draw, or describe a person, town, tree, landscape, or act which we have witnessed, to be convinced of this. Perception is not largely a matter of the senses in any case, but mostly one of judgment. There are infinite degrees of accuracy and inaccuracy. Ask any group of people how large the sun appears to them, and one will say the size of a quarter, another of a dollar, another of a plate, a fourth of a cart wheel, a fifth, of a house, and so on. Our judgments of distance are yet more various, and yet these judgments of size and distance enter into all perception.

We are also subject to illusions of many kinds. In a series of experiments described by G. Stanley Hall in "Educational Problems," something over four hundred children were tested separately by having a drop of water put on a handkerchief and being asked to tell what kind of perfume had been used. Over sixty per cent were able to detect the perfume. Similarly when a few drops were placed in a glass of water, they were asked to detect the extract and more than fifty per cent

[1] Chapter from a forthcoming book on "Children in the Home."

of them could tell the kind of extract that was used. Anyone who has ever tested children knows how powerful are suggestions of this kind, and how constantly they perceive things which are not there.

Not only do we have these errors from perception, judgment, and illusions, but when things are accurately perceived, we have still many errors from faulty memory, or from a faulty combination of perception and memory, so well illustrated in the old parlor experiment in which with a group of people sitting in a circle, one whispers to his right-hand neighbor a certain statement, which is passed from person to person around the ring until the last person repeats it to the first. Usually in this transference it will be found that the whole nature of the fact has been changed. We have also the old story of the blind men and the elephant, where one feeling of his side, said the elephant was like a wall; another of the leg, said he was like a tree; another of his tail, said the elephant was like a rope, and so on. These inaccuracies of perception and memory are too well known to need further illustration.

Even where the fact is clearly seen and remembered, we have still the difficulty of describing it accurately in words. There is thus a vast series of misrepresentations which are due to faulty perception, memory, or statement, which do not come from a wilful purpose to misrepresent.

Fanciful Lies: Little children are not much interested in the work-a-day world of adults, which seems to exist mostly for making money, the world of hard facts. They live largely in a world of make-believe, with imaginary companions, while they themselves change from day to day, to Indians, cowboys, wolves, bears, and steam engines as the fancy moves them. Every type of fairy tale that has ever been invented by any race is invented constantly in this romancing of little children when they think themselves unobserved. This type of romancing leads to many fantastic lies, as to things they have seen in the woods, in the dark, or elsewhere; lions and bears, rabbits as big as sheep, etc. Imaginative lies are to be expected from little children up to the age of five or six, and ofttimes they are unable to distinguish between a vivid dream, a fancy, a tale which they have heard, and something they have actually seen. This type of imagination is the source of all literature. It is not to be discouraged, though children as they grow older should distinguish between their imaginative tales and facts.

Wicked Lies: The type of lie, however, in which we are primarily interested is that which represents a wilful mis-

statement of facts, usually with a view to gaining some private end, or perhaps of doing injury to someone.

Degrees of Truthfulness and Lying

Animal Lies: It used to be thought that all vices began with man, and that the animal kingdom was without the faults which man had acquired through the fall. We now know, however, that all vices which civilized man possesses are found in yet more accentuated form as we go down the scale of life. Lying is universal throughout the animal world. It begins in its simplest form with protective coloring, or protective imitation, in which as a means of protection from their enemies, insects and the lower forms, pretend to be sticks, or leaves, or fish claim to be pieces of kelp. All the cunning of the animal world by which it gains its prey, or escapes its enemies, is a species of deception which is as near a lie as may be without words. The fox doubles on his track to deceive the hound; he has various feints to make his pursuers believe he is going in a different direction from the one he intends.

Acted Lies: It is usually counted that the acted lie is less sinful than the one which is spoken, even though its result is the same. It is not as wrong to point in the wrong direction, as to say that the person went in this direction. It is not as wrong to nod the head as to say "Yes" to a false statement. To smile in seeming approval of a wrong plan is less wrong than to say you agree, and if you can convey the idea through a shrug, or an attitude, it makes little difference how wicked the idea is.

The Partial Lie: In the courts the witness is required to tell "the truth, the whole truth, and nothing but the truth." The partial lie may often be more wicked than a statement which is wholly untrue, for the reason that the portion which is true leads the hearers to believe that it is all true. For instance, if the question is of stealing chickens, and you saw Sam go to the chicken coop in the evening, but come away without a chicken, and you simply say you saw Sam go to the chicken coop, and stop there, you have conveyed a wholly wrong impression which is the worst kind of a lie. The Psalmist says: "I said in my heart, all men are liars." Not only are all men liars, but nearly every statement of all men is more or less a lie, as all court testimony shows. Hence the universal custom of cross-questioning witnesses, and the constant inaccuracies of statement discovered. Few of us will give an account of any important scene or act in which we are

much interested, which will be wholly truthful. For instance, a bank robbery is witnessed by a boy, or young man. He will perhaps tell everything as he saw it, but will say he was nearer than he was, or will add that he was not afraid, or will give some fanciful reason for his being there. In statements where there is self-interest, some shade of misrepresentation is sure to appear.

What Is a Lie? The Bible says: "Thou shalt not bear false witness against thy neighbor." This apparently means you shall not wilfully misrepresent some event to the injury of your neighbor, where you are under oath to tell the truth. This does not cover one-hundredth of one per cent of lies. Ananias and Sapphira fell dead because they misrepresented the amount of their property. If this should happen in these days of income taxes, the number of victims might run into the millions. But neither of these illustrations represent typical cases of lying. Shakespeare says, "Who steals my purse steals trash, but he who filches from me my good name, takes that which not enriches him, but makes me poor indeed." This is the really wicked type of lie, the lie which does injury to another.

Is the Lie Always Wrong? There has been infinite discussion of this question down the ages. The practice has been that one may lie to his enemies, or to shield a friend. It is not held to be virtuous to be a tattletale, although the telling of a wrong deed is an obvious duty required by law in case of crime.

As there are all degrees and shades of lying, with different degrees of culpability, so there are all degrees of truth-telling. Take the story of George Washington and the cherry tree. Supposing this story to be true, it did not represent much virtue on the part of George, for the cherry tree must have shown plainly that it had been cut down by a small boy with a hatchet and it would be difficult for the only small boy with a hatchet to deny the facts.

A much more heroic case is the case in the Lady of the Lake, where Fitz James, almost surrounded by a hostile clan, comes upon Rhoderic Dhu by the campfire, and when asked, "Art thou a friend to Rhoderic?" replies "No." "Thou durst not call thyself a foe!" "I dare, to him and all the clan he calls to aid his murderous hand," though that statement seems to mean immediate death.

Another example not much less heroic is that of our friend Tom Sawyer. He and Huckleberry Finn alone know that Indian Joe has killed the Doctor. They know his bloodthirsty,

revengeful nature, and fear to tell. But when they see another man is to be punished for his deed, Tom comes forward and tells the story. In common parlance, he would not have been lying if he had kept still, but the spirit of truthfulness required him to tell.

Lies to Enemies: All through the ages, the lie has been one of the chief means of defense of the weak against the strong. Military tactics also consist chiefly in ways of deceiving the other party. No general could hope to succeed if he made known his plans to his opponent. Deception has always been necessary in war, and always will be necessary so long as there are wars and enemies. The art of boxing, fencing, and wrestling, consists largely in making feints, and deceiving your opponent as to your intentions.

Children naturally discriminate in accordance with this law, and hold that it is right to deceive the members of the other gang, or people whom they do not like, or their antagonists; and that it is wrong to lie in proportion as the person deceived is close and dear. Lies to father and mother are the wickedest lies of all.

The principle on which this is based is self-evident. Your enemy will try to prevent your success, and thwart your plans. It is necessary to conceal them from him, if you would be successful. On the other hand, your friends are interested in your success and welfare; the more fully you reveal your plans and purposes and aspirations to them, the greater co-operation you may expect, and the larger ultimate success.

These principles are perfectly illustrated in a football game. The success of a team consists in its deceiving the other team as to its intended plays, and in a perfect understanding on the part of the members of the team of all the plays intended, hence football signals.

The perfection of truth is only reached when we come to a stage where the mind lies open and transparent, where nothing is concealed, but everything fully and freely told. Emerson says, "A friend is one before whom we may think aloud." Unfortunately, this perfect truthfulness may only be in a perfect world.

Oaths

The tendency to lie has always been recognized, and many rites and rituals have been invented to secure truthfulness on important occasions. It is probable that even the ceremony of marriage itself owes its origin to an attempt to make an agreement more binding among primitive peoples. Many

mysterious and semi-religious rites have been thrown around forms of agreement to make a violation sacrilege.

Various oaths have been used in the church. It will be remembered that when Harold was shipwrecked on the shore of Normandy, and fell into the power of Duke William, the latter made him swear that he would renounce the throne of England. In his oath he placed his hand upon the altar in the presence of many witnesses. After the cloth is removed, he beholds within the altar a coffin full of the bones of the saints, and is terrified at his oath which he had not intended to keep. During the Middle Ages, the common form of oath was to swear by the Cross, while since the time of the Reformation, the common form is to require the person to place his hand upon the Bible. We do not ordinarily realize that our profanity, or oaths, were once taken in order to make a promise more binding.

Children have all sorts of devices of their own, and say: "Cross my heart, I didn't do it. I hope to die this very minute, and the worms may eat me, if I did," etc., etc.

All of these forms have two common characteristics; the statement is witnessed by a number of people and often written down, so that if the person does not keep his word he is proved a liar, and they bring in a religious element, so that the lie becomes perjury, disloyalty to the state, and a sacrilege against God.

Secrets

While it cannot be said that all secrets are lies, all secrets are a denial of a perfect openness of truth and lead to hundreds of lies. When Macbeth has killed Duncan, it remains a secret with him and Lady Macbeth, but it makes his life a lie toward everyone else. The Manxman takes the wife of his friend, and his life becomes thenceforth one inextricable jungle of lies. The husband or wife who is untrue must tell many lies to keep the secret, and this is true of nearly all secrets, even though they be not sins.

A secret in the family, which is not shared, forces husband and wife and family apart, while a common secret is a strong bond. Children often make up secrets in order to deepen their friendship for preferred chums, while to be excluded from a secret often means the breaking off of friendship. All secret societies owe much of their stability to their secret rites and passwords.

Psychological investigations show that a secret is a dangerous pet. A secret which is not shared tends to make the person solitary, and self-centered, represses spontaneity, slows

down reaction time, and decreases mental efficiency. The Catholic Church has been wise in maintaining its confessional.

Conditions of Truthfulness

Deception has always been one of the chief methods of combating an enemy, and always will be. So long as there are wars, every general will try to deceive his opponent as to his intentions, and so far as the child or person lives in a hostile community, he will react to these conditions by habitual lying. Truthfulness or self-revelation is not good policy toward enemies, and always results in disaster.

The first condition of truthfulness on the part of children is that they shall live in a sympathetic home where parents realize that children are not to be judged by adult standards, and where love is the guiding star. So far as these conditions are met, perfect truthfulness is an advantage, as it enables the parents to help the child in the things that he wishes to do. There is one other vital condition. All children break rules occasionally and disappoint parents. To meet the reproof or punishment involved requires courage. Courage is essential to perfect truthfulness.

Truth is the flowering of all the virtues. We shall never have truthfulness until all other vices and sins and weaknesses have been conquered. The one who steals or lies, or wrongs another, the one who neglects his duty, is weak, or cowardly, practically always lies to conceal his misdeeds. Unless he had believed he could escape the consequences of his wrongdoing by some kind of deception, he would not have committed them in the first place. We shall never have perfect truthfulness until we have that perfect social feeling which Jesus described by saying: "Thou shalt love thy neighbor as thyself." All other important faults must disappear first, else lying will surely appear as a defense against them.

How Far Is Truth Practicable?

Little children often do not know when they are lying. Fanciful lies are to be expected, and not severely punished.

We cannot exact, in an imperfect world, the truthfulness which could exist only under conditions of universal goodwill and helpfulness, but there are certain minimum standards which should be required. The first of these is what has come down to us from chivalry, as "word of honor." The child must do the things which he promises to do; he must be reliable. Business honesty, not to deceive in regard to the thing

we buy or sell has come to be recognized as "the best policy" in business, and is a part of business ethics.

In society the practice and current ethics are not in the direction of a high degree of truthfulness. We are supposed to be "delighted" whether we are or not; to "approve" all that our host and hostess do; to smile and show pleasure even if we are bored, and perhaps to overstate our regard and appreciation. This kind of personal over-appreciation both of ourselves and of others, while not truthful, is generally good ethics, as an over-appreciation of ourselves holds us up to a higher standard, and over-appreciation of others requires of them a higher standard, and makes the world a better world to live in.

Teaching Truthfulness

Example. The most effective way of teaching truthfulness, as of all virtues, is by example. Children unconsciously imitate the ways of their parents in this as in other things. Many parents would be shocked if they realized how bad an example they are setting. Parents who are good church members and regard themselves as truthful, will often tell the child that the candy is all gone, when they do not wish him to have any more, or they haven't any money to buy candy, or that the policeman will arrest him if he isn't more quiet, or that bears will eat him if he goes to the woods, or snakes will get him if he goes to the river, and dozens of other lies of this kind. They tell him that the stork brings the babies, and thereby deny their parenthood, and cause the child to lose the point in family membership, and fail to realize his accountability to them. They tell him that Santa Claus brings the presents at Christmas time, and thereby lose the natural gratitude which he should feel for their thoughtfulness and care. There are many beautiful things about the Santa Claus legend, and it has a deep power in stirring the imagination of childhood, but it may be questioned if this appeal to the imagination is worth what it costs. They tell him that the Easter rabbits lay the Easter eggs, and get nothing in return for this falsehood. They practice on him all kinds of deception on the First of April, and call it April Fool.

All down the ages there have been certain days, much more common in earlier times, on which the ordinary laws of ethics were set aside, and April Fool's day is the one for the setting aside of truthfulness. You may say anything, if you only say it in fun, or if you are fooling, however untrue it may be.

Suggestion: Next to the practice of truthfulness the most effective method of teaching truthfulness is suggestion. Par-

ents should assume that their children will tell the truth. "Johnny is a brave boy; I know that he would not lie to mother." One of the easiest ways of securing truthworthiness is to repose confidence, and parents must always go as far as is safe in this regard.

Teaching: The child should be made to see that the lie is always the defense of the weakling, and the coward; that to be called a liar is one of the greatest of insults, and in the code of honor of all countries it demands a blow, or an actual duel; that truthfulness gives a dignity and poise to life that nothing else can, and that no one is really eligible for an important position if he is known to be a liar. There is no better way, perhaps, of teaching the effect of lying to little children, than the old fable of the boy who cried, "Wolf, wolf," when there was no wolf; and when the wolves came, no one would believe him, and he was left unaided.

The Bible stories in regard to truthfulness are probably as effective as anything that can be given.

The most successful system of teaching truthfulness that has ever been, however, was chivalry. The Knights of the olden time did not practice all the virtues required today, and on many occasions they were little better than thugs and robbers; but all chivalry is given a certain romance, from this great fact of truthfulness, to which every Knight was sworn. De Bois Guilbert says at Torquelstone, "Many a law, many a commandment have I broken, but my word, never." There is no better method of teaching truthfulness than the stories of the Knights of King Arthur.

The Boy Scouts also are a similar organization, with much of chivalry, and a similar requirement of truth. There are many thousands of boys in America who are more truthful today because they are scouts.

BACKWARD BOYS

By Alice M. Clark

If we should call the roll of dullards at school, all of these little boys would have to answer "present:"

Arthur Wellesley (Duke of Wellington)
Isaac Newton
Jonathan Swift
Robert Clive
Walter Scott
Richard Brinsley Butler Sheridan
Robert Burns
Justus von Liebig
Carolus Linnaeus
Frederick Heinrich Alexander von Humboldt
Louis Pasteur
James Watt
Robert Fulton
Johann Christoph Friedrich von Schiller
Heinrich Heine
Henry Ward Beecher
Jacques Rousseau
Friedrich Fröbel
James Abbott McNeill Whistler
Patrick Henry
Edgar Allan Poe
Georges Clemenceau (Premier)

This roll-call is in no sense complete, nor could it be made so even if we wished to attempt this, because of lack of sufficient data in the biographies of great men. The roll covers, we admit, a period of several centuries and could easily be matched by an equally impressive list of men of genius who are known to have been precocious children.

Today the expressions "supernormal child," "intensive training," "the upper fourth," are in the vocabulary of every progressive pedagogue. Cities and schools vie with each other in introducing efficient methods of saving the gifted children. Colleges compete in graduating students whose ages would indicate that they belong in the high or grammar school. The pedagogical psychologist is deserting the subnormal child, who for a decade has been his pet, and is turning his attention to the supernormal. He says, "We have been spending too much

time and money on defective children; we have been cultivating a desert. If you *could* educate a subnormal child a thousand years you *might* make him normal. A more profitable field is offered by the child who is above the average, a class which has been neglected, by our schools. Our educational institutions should not turn out so many mediocrites. Let us take our implements,—intelligence testing and vocational and intensive training—and let us apply them to the fertile soil, to the gifted child."

The schools, acting on the suggestion of the psychologists, are trying schemes of rapid promotion for bright pupils, of special classes offering fuller courses, of intense training.

Yet, in our enthusiasm for saving these brilliant children, we must not forget a truth which Sully has expressed so well in his Education of Genius: It cannot be said that the boys who afterward proved themselves to have been the most highly gifted shone with much lustre at school or found themselves in happy harmony with their school environment.

"Our Davie's a fine good-natured crater but uncommon wake-minded" was the opinion expressed by his own mother of the child David Hume. Indeed, David seems to have owed very little to knowledge gleaned in schools.

Richard Sheridan's mother failed to recognize the spark of genius in her boy, for she says about him and his brother in a letter to their new school-master: "Two such impenetrable dunces I have never met with." Sheridan was inferior to his school fellows in the "ordinary business of school," as his biographer says.

Thackeray did not attain distinction at school; he probably would have been excluded from a class of brilliant pupils, if his school had had such a class.

"What Southey "gained of book-lore in his two years' schooling was as little as could be"—another boy refused admission to our gifted-pupil class.

Keats in childhood was not attached to his books, his penchant was for fighting. When Darwin left school, he says, "I was considered by all my masters and by my father as a very ordinary boy, rather below the common standard in intellect. To my deep mortification my father once said to me, 'You care for nothing but shooting, dogs, and rat-catching, and you will be a disgrace to yourself and to all your family.'"

Burke, in his youth, was "desultory and excursive"—not any fitness for intensive study is indicated by these terms.

Schiller was negligent at school and was often reproved because he was not alert.

Heine's teacher vowed that the lad had no soul for poetry.

Byron was backward in technical scholarship and low in his class, in which he seems to have had no ambition to stand high. He was at the head only when, as was the custom, the class was inverted, and the bantering master repeatedly said to him, "Now, George, man, let me see how soon you'll be at the foot."

Goldsmith's teacher, in his earliest school days, thought him the dullest boy she had ever taught. Truly Goldsmith's village school with its profound and learned master was inferior to our American school today. Yet would we, with all our intelligence tests, have recognized in the little, marked, awkward, ugly Oliver, a genius in the germ?

General Grant was not above mediocrity in his school work.

W. H. Seward was considered "too stupid to learn."

Napoleon graduated forty-second in his class; "who were the forty-one above him?" asks Swift.

Sir Humphrey Davy, who became one of the greatest of England's chemists, was an idle boy at school and got low marks. He was popular among the students, however, because he could tell such remarkable stories and because in his leisure time he experimented with gun powder, making, to the delight of his comrades, what he called thunder-crackers. If Davy's lot had led him into a chemical laboratory in one of our crowded high-schools, the chances are that the thunder-crackers would have met the fate of Mary's little lamb, and been banished from the schoolroom, for they, like the lamb, made the children laugh and play. Humphrey Davy never lost this knowledge of the way to a boy's heart, however, for in his will he left a sum of money to the grammar school in which he had been educated, with this definite condition, that the boys should have a holiday on his birthday.

Genius is not always docile in youth. Thomas Crowell was a ruffian when a lad; Thurlow, even at college, was idle and insubordinate; Murchison was mischievous and not interested in science till he was thirty-two.

Henry Fawcett, the wonderful blind postmaster of England, was not an easy child to manage. His first teacher said she had never had such a troublesome pupil. Little Henry reported one day to his mother, "Mrs. Harris says if we go on we shall kill her; and we go on and yet she does not die!" He loved fishing and sport—he would probably have gone out for track and football if he had been in one of our high-schools. It was not until fourteen that this boy began to study.

As Swift tells us, school work is analytic while life is synthetic, and the narrowness of the school enclosure prompts many a youth in the wayward age to jump fences and seek new and alluring pastures. According to school standards, many were dull or indolent, but their nature was too large or their ideals too high to be satisfied with it.

One of the most striking examples of a man of genius who was in no respect regarded as a gifted child was Linnaeus, the famous Swedish botanist. When he went to the university he carried a dubiously worded testamonium from Nils Krok, the rector of the gymnasium which he attended, to the effect that shrubs in a garden may disappoint the cares of the gardener, but if transplanted into different soil may prosper; therefore, the bearer was sent to the university, where, perchance, he might find a more propitious climate.

John Hunter, the great anatomist, was very dull and averse to study. Webster at fourteen could not rise to speak before the school. Joseph Banks, the great botanist, was idle and had no interest at thirteen. When Edison was a child he was not at all strong. For this reason he was not allowed to go to school early, and then he went for only a short time. He was usually at the foot of his class; the teacher had once spoken to the inspector of the boy as "addled." At this report the mother was indignant, for she had studied her boy closely and knew that he had mental powers beyond most children. Accordingly she removed him from the school and undertook his training herself.

Premier Clemenceau was not a good student; at the age of sixteen he knew about as much as a boy of twelve.

From these examples, scattered and meagre though they are, we know that it is not unusual for an eminent man to be considered dull in his boyhood. If, in our American schools, today we form special classes to help the brilliant child conserve his time, we shall, of course, fail to include in them many future men of genius. For in spite of the progress we have made in pedagogy we have no infallible method for detecting the difference between precocity that means genius and precocity that is superficial and short-lived, nor for recognizing genius in a child that is backward and immature.

Now and then in the future, as in the past, some little traveler, misunderstood or undeveloped, branded by the schools a dullard, unappreciated perhaps by his own mother, will pass by our educational guide-posts (maybe because he can't read them), and take his own way, often a devious path, which will lead him, guided by instinct, to his mountain-peak at last.

BOOK NOTES

The Salvaging of Civilization. By H. G. Wells. New York, Macmillan, 1921. 199 p.

Wells, in a very vivid and characteristic way, describes the indications, which he thinks are many and prevailing, that the human race has reached the apex of its development and is declining. Up to the great war man has been ascending and has been justified in boasting of his progress. Now he has crossed the Divide and is descending toward barbarism and bestialism. He can be saved, not by eugenics but only by a new and higher education which shall realize some of Comenius's ideas by being universal at root, with variations for different countries. We must have a new Bible, an evolution taking the place of Genesis, and above all a new religion. Man must be made over into a social being; the countries of Europe, if not of the world, must be federated as the American States were; and the tendencies to militarism, which with the means science has put into its hands is so destructive, must be exactly reversed.

Back to Methuselah: A Metabiological Pentateuch. By Bernard Shaw. New York, Brentano's, 1921. 400 p.

Shaw, like Wells, thinks mankind is doomed unless some way out can be found. His panacea is not education but increased longevity. Mature men now are really children; the race is not grown up. If all our affairs were rather suddenly to be placed in the hands of people under twenty we should come to grief. But that is just what has been done in another way, viz., the problems which men have had to solve, especially since the war, are twice as big and difficult, so that they are no more grown up to them than men of twenty would have been before. In a word, man must develop the power of living several hundred years and he can do it by exactly the same methods as those used in cultivating muscle, riding a wheel, swimming, or acquiring any other kind of skill. All that is necessary is that he should want intensely to live longer. All this is in his Preface, while the drama tells us just how the rule of this new type of superman came into the world and how it worked. The only real education is in transmitting knowledge from age to youth. Experience has taught man all he knows, and progress consists in imparting it to others so that they can short-circuit the process by which it was acquired.

Sex for Parents and Teachers. By W. L. Stowell. With an introduction by G. Stanley Hall. New York, Macmillan, 1921. 204 p.

This book, in the opinion of the writer of this note, is the best of all the many books intended to introduce young people to the subject of sex. The author is mature, experienced, sound, is no faddist, and while he believes in plain speech and ocular envisagement of all that it is necessary to know, there is nothing in his book that can really offend. His illustrations are new and not of the hackneyed type that we nearly always find in such works. Indeed, he has given an unusual amount of attention to his twenty-six carefully chosen plates.

Human Geography. Book I: Peoples and Countries. By J. Russell Smith. Phil., Winston, 1921. 369 p.

This work begins with a study of men and trade as illustrated in its simple form among the Eskimos and Indians of the great Northwest. Then comes the study of the earth and maps, the different sections of North, Central, and South America; Europe, Africa, and Asia, country by country. The work is illustrated by more than 500 well-chosen cuts so that as a picture book alone its merits would rank high as visualizing typical forms of life all over the world.

Here and Now Story Book. By Lucy Sprague Mitchell. New York, Dutton, 1921. 360 p.

The clever author of this book encouraged children from subkindergarten age up to seven or eight to develop stories, aided a little by others and sometimes by the teacher. The book contains a large number of these stories. There are many illustrations and a good many poems. The author's notion is that children work best with things with which they are familiar and not with things that are remote or unknown, which latter is generally given them in school. The school trains chiefly the receptive faculties and those that are to be active in practical life later, neglecting most that is artistic or creative. Mrs. Mitchell insists that not only individuals but groups can write stories and poems and illustrate them by their own drawings. Some two-score of these crude but spontaneous creations in the field of language composition make up the bulk of this interesting book.

Outline of Abnormal Psychology. By J. W. Bridges. Columbus, Adams, 1921. 226 p. (2d. ed. rev.)

This outline presents a fairly complete list of the abnormal mental phenomena, shows how these phenomena are grouped into the syndromes manifested in the various psychoses and neuroses, and summarizes briefly the most important etiological facts and explanatory theories of the mental anomalies and diseases. Under the neuroses he gives a very brief characterization of Freud, Adler, Jung, Sidis, Kraepelin, and others.

What Japan Wants. By Yoshi S. Kuno. New York, Crowell, 1921. 154 p.

The author, who is a professor in the University of California, tells us in seven successive chapters what Japan wants in America, on the Pacific, in China, Korea, Siberia, at home, and what Japan and other nations should do. While the book makes no claim to be authoritative or representative of the government views, we are assured that it represents the enlightened sentiment of Japan. It should, therefore, interest every patriotic American. Fortunately, the author has condensed his views into a very modest space and the type is so good that it makes for easy reading.

A Christian's Appreciation of Other Faiths. By Gilbert Reid. Chicago, Open Court, 1921. 305 p.

This volume is based on a series of lectures given in China during the early part of the war. The author tells us in successive lectures of a Christian's appreciation of Confucianism, Taoism, Buddhism, Islam,

Judaism, a Protestant's appreciation of Rome, the Trinitarian's appreciation of the Unitarians, the appreciation of Christ by skepticism, the concord among religions and unity of the truth, and the bearings of this appreciative attitude on missions.

The Control of Parenthood. Ed. by JAMES MARCHANT. London, Putnam, 1920. 203 p.

Now that the world is beginning to recognize the responsibilities of parenthood, realizing that marriage should be the outcome of pure love, that nature indicates early marriage although modern western society has drifted far from these norms, with consequent great sexual distress, the problem is to teach the subject to the young; to make wedded life richer, children better, to learn what is the duty of the state, etc. Nine prominent Englishmen and -women from various walks of life, beginning with Prof. Thomson, the well-known biologist, and ending with Marie Stopes, all introduced by the Bishop of Birmingham, contribute here, and their work is grouped under the captions of biological, economic, social, religious, and imperial and racial aspects.

The Psychology of Learning. An Advance Text in Educational Psychology. By WILLIAM HENRY PYLE. Baltimore, Warwick and York, 1921. 308 p.

In this book the author tells us he has "tried to state everything that is known about learning," including all the experimental work that throws any light on the subject. In the light of this he tries to give an impartial verdict on educational psychology. In successive chapters he discusses the nature of learning, the learning curve, economical learning with its special and general factors, ideational learning, the retention of experience, the learning capacity, its measurements and differences, transference and interference, fatigue, and inborn nature in relation to learning.

Teaching the New Geography. A Manual for Use with the Frye-Atwood Geographical Series. By W. W. ATWOOD and HELEN G. THOMAS. Boston, Ginn, 1921. 203 p.

"This manual has been prepared as a direct help to teachers of geography in elementary schools. The educational ideals that have guided the authors are outlined; the plan of the two-book series is presented, the regional treatment of geography for the last two years of study is explained, the project and problem methods of work are fully illustrated; several problems are worked out in detail; and numerous projects are suggested. The new and progressive system of maps in Book Two is described and the plan for picture studies is explained," etc.

The Contents of the New Testament. By HAVEN MCCLURE. New York, Macmillan, 1921. 218 p.

This book is the crystallization of a number of years' classroom experience in teaching the New Testament as an elective English course in a public high school of over five hundred students. The author has tried to present the results of the labors of the world's greatest Bible scholars. To our mind he falls very far below his claims and much farther below what could and should be done in this field. He has

given us a somewhat new kind of Sunday school book, and his information about Palestine and the Jews of Jesus' day and the origin and content of the Gospels and Epistles, etc., is doubtless good enough. But what shall we say of a writer who offers a course in this field which leaves one, at the end of it, unaware of what the higher criticism means, and with almost no knowledge of the scope of the great controversy that has changed the New Testament text from dogma to literature. To raise and face this question boldly is one of the most splendid intellectual stimuli that can possibly be offered to young people. The first insights into what evolution is and means are not a more potent agent in making mind and culture. But this author has absolutely no glimpse of insight into all this and the results of his course would probably make the mind still more impervious to new ideas in this field.

State Maintenance for Teachers in Training. By W. S. Hertzog. Baltimore, Warwick and York, 1921. 144 p.

This work treats of the prospective teacher and the state conditions that make a profession attractive, teacher-training as a state function, methods by which the state may provide trained teachers, conditions that justify additional aid for prospective teachers, the plans for recruiting the profession through financial assistance in different countries, methods of recruiting other professions, the advantages and disadvantages of subsidies for teacher training as an element in recruiting the profession, and what a state subsidy bill should be and do.

Le Developpement Physique de L' Ecolier Cubain. By Georges Rouma. Bruxelles, 1921. 154 p.

This is one of the most careful and comprehensive of all the special studies in pedagogic anthropometry. It gives us what seems to be a very accurate and reliable picture of the physical development of Cuban pupils—white, black, and mulatto. The author's brief review of similar studies and his bibliography show that he is abreast of the latest work done here. Nearly half this work in bulk consists of 17 infolded sheets of tables showing his results.

An Outline of Physical Education. By Ernst Hermann. Cambridge, University Press, 1917. 132 p.

The author has given us here a remarkably well-digested scheme for physical training from the beginning of the public school course through the high-school. The writer of this review knows of nothing so full, all-sided, and complete as this syllabus except the remarkable work of Clark Hetherington.

Archiv für Religionspsychologie II/III. Ed. by W. Stählin. Tübingen, J. C. B. Mohr, 1921. 309 p.

It should interest all teachers to know that Germany has a society for the study of religious psychology which is well organized, has programs, prints proceedings, and that there is now a very valuable body of recent literature by those on its editorial board. Besides printing original articles the *Archiv* undertakes to give digests of all the important literature in this field.

Self-Development: A Handbook for the Ambitious. By H. Addington Bruce. N. Y., Funk and Wagnalls, 1921. 332 p.

The author wishes to help his readers gain the higher prosperity which is only too little sought. In successive chapters he tells us we must organize life, believe in self, get interested, cultivate imagination, nourish the soul, train the memory and also the "forgettery;" grow in initiative, poise, and personality; get the joy habit, acquire self-control, study manners, profit by defeat, learn to face the unpleasant, etc. We are also told how reading helps, how to talk well, and how ideas come. The author makes no attempt to be erudite or technical but has written here the kind of book that young people want and ought to read.

The High Schools of New York City. A Handbook of Procedure and Personnel. By C. R. Jeffords and C. F. Walker. N. Y., High School Teachers' Ass'n, 1921. 223 p.

This work gives an outline of the New York system and then describes in successive chapters the origin and development of the high schools, what they teach, the present trend of high school teaching, appointment and promotion of teachers, salaries, the retirement system, and other teachers' organizations. Very striking curves are charted showing (1) increase in the cost of living, (2) the normal salary increases, and (3) the actual depreciation in value of teachers' salaries.

The Value of School Supervision. By Marvin S. Pittman. Baltimore, Warwick and York, 1921. 129 p.

The writer treats in successive chapters of the problem determining conditions of the experiment, the equivalence of groups, the zone plan, community activities of the supervisor, and statistical data of the experiment in various grades and branches.

Allgemeine Psychopathologie für Studierende, Ärzte, und Psychologen. By Karl Jaspers. Berlin, Springer, 1920. 416 p. (2d ed. rev.)

Chapter I of this book treats of the subjective phenomena of the morbid psychic life; II, objective symptoms of the psychic life; III, theories; IV, intelligence and personality; V, synthesis of morbid phenomena; VI, sociological relations of abnormal psychic life.

The National Intelligence Tests. By Guy M. Whipple. (Repr. fr. *Jour. Ed. Res.*, vol. IV, June, 1921.)

State Laws Relating to Education. Enacted in 1918 and 1919. Comp. by William R. Hood. Wash., Bur. of Ed., 1921. 231 p.

A Program for Health Teaching in the Elementary Schools. By J. Mace Andress and Mabel C. Bragg. (Health Ed. Bull. No. 10.) Wash., Bur. of Ed., 1921. 107 p.

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